

Section V

Development Master Plan

Overview

After much discussion and syntheses of public comment, the findings presented here represent the consensus reached by the Stakeholder Task Force and the Technical Planning Team.

Continuing to rely upon the relationships fostered between Dakota County and various stakeholders will be of equal importance to the plan itself as it is implemented in future years.

Balancing Human Use of the Park with Ecological Protection

The Development Master Plan is a direct outgrowth of an extensive public participation process that considered all facets of the park’s future use. As defined in Section I, preparation of this plan was the last step in the planning process to ensure that the ecological underpinning of the park and major land use zones were evaluated prior to considering specific development initiatives. Whereas ecological stewardship was considered in the previous sections, this section considers the major land use zones and the development program for the park.

Development Master Plan Context

The master planning process strived to be exhaustive in its consideration of the issues associated with the future use of the park. After much discussion and syntheses of public comment, the findings presented here represent the consensus reached by the Stakeholder Task Force and the Technical Planning Team.

Note, however, that the master plan remains a dynamic planning tool that will continue to evolve and be fine-tuned as it moves through implementation steps and benefits from additional public input, management and operational experiences, and recreational demand in the years to come. Although it is expected that the findings presented here will continue to have merit for the foreseeable future, implementation decisions made along the way will have greater strength if they are done with continued input from stakeholders who have an interest in the park’s future. Even though the Task Force’s work will be completed when this master plan is adopted, continuing to rely upon the relationships fostered between Dakota County and various stakeholders during this planning process will be of equal importance to the plan itself as it is implemented. Through an ongoing commitment to collaboration, it is believed that the true values that the park brings to the community will remain at the forefront of the decision making process.

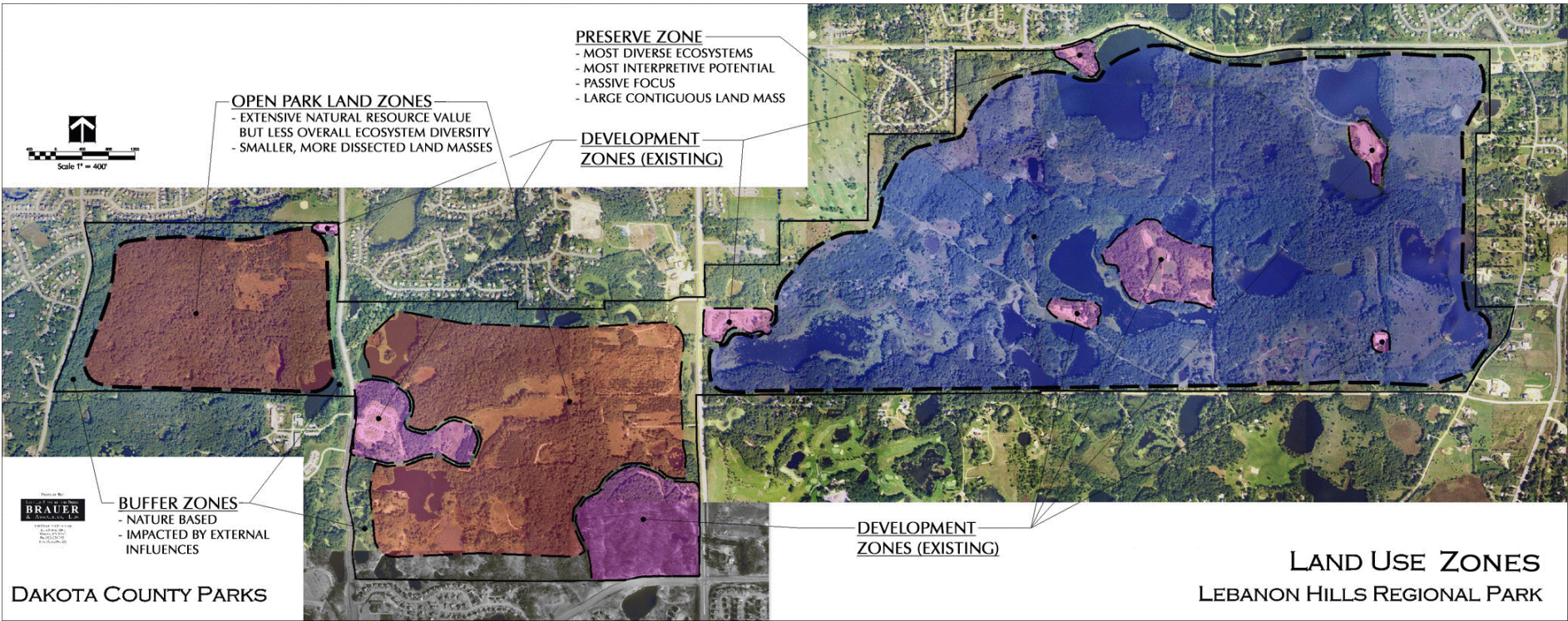
One of the most challenging aspects of developing the master plan was finding a responsible way to preserve the natural qualities, character, and sense of place that are the intrinsic values of the park while still providing opportunities for human use. In many respects, Lebanon Hills gets to the core of Dakota County Parks Department’s mission statement: *“To enrich lives by providing high quality recreational and educational opportunities in harmony with natural resource protection and stewardship.”* It is believed that the master plan presented here represents a thoughtful and responsible balance between human use of the park and its ecological preservation. One of the hallmarks of finding balance was showing a commitment to due restraint in creating new or expanding existing development areas within the park. Another one was listening closely to public input and preparing a development program that would serve the recreational needs of the community today and in the future, yet not go too far. As one stakeholder put it, *“the development of the park should reflect the simplicity of the outdoor experience being sought.”*

Land Use Zones

Land use zones describe the park by existing and proposed functional uses and overarching ecological characteristics *as they relate to the development program*. By considering the park from this broader perspective, the most appropriate interrelationship between the ecological resources of the park and the proposed development program can be discovered. As the aerial map in figure 5.1 illustrates, three distinct land use zones emerged:

- Preserve Zone
- Open Park Land Zone
- Development Zones (defined under three sub-zones)

Figure 5.1 – Land use zones within the park.



It is important to stress that the land use zones as defined in figure 5.1 relate specifically to the development program.

It is important to stress that the land use zones as defined in figure 5.1 relate specifically to the development program and are not meant to draw distinctions between which area of the park is more or less ecologically valuable or of higher stewardship priority. (These issues are considered in greater detail in the previous section.) The following considers each of the defined zones in the context of the development program.

The ecological diversity found within the Preserve Zone, which underscores its value for nature trails and programs.



Although the ecological diversity found within the Open Park Land Zone is not as diverse as the preserve zone, it still remains a vital aspect of the park's character and worthy of the same level of stewardship.



Preserve Zone

The Preserve Zone encompasses the largest area of the park and offers the most extensive overall ecological diversity. The area is characterized by a cross-section of all of the major plant communities, ecotonal areas (which refers to the transition zone between two plant communities), and pond/lake system that are found within the park. Given its ecological diversity, relatively rugged terrain, and large land mass, this area of the park is the best suited for a strong focus on outdoor education, interpretive programs, and a variety of nature trail experiences.

Specific facilities that are sited within this zone include:

- ▶ Nature and horse trails of varying length that traverse through an array of ecological systems.
- ▶ Interpretive center facilities for environmental learning programs.
- ▶ Primary trailhead/hub for nature-based trails and activities.

Along with the above listed facilities, figure 5.1 also identifies a number of other existing and proposed development areas located within or on the periphery of the Preserve Zone. The use and expansion of these areas are considered in greater detail below under Development Zone. Within the larger open spaces outside identified development areas, the developmental focus will be limited to trails (with a focus on nature trails) and features such as boardwalks, overlooks, wildlife blinds, and sitting areas.

Open Park Land Zone

The Open Park Land Zone encompasses two areas of the park that also offer significant ecological diversity, albeit less than that found in the Preserve Zone. The major discerning factor between the two zones is that the outstanding ecological values offered by the Preserve Zone provide the strongest rationale for locating the major facilities associated with outdoor education and nature interpretation within that zone, as defined above. Other than that, the same general philosophical underpinning of showing restraint toward expanding the existing development areas still applies to the Open Park Land Zone as well. However, given the established uses, this zone also affords greater emphasis on a broader spectrum of recreational and educational activities, such as Camp Sacajawea, the campground, mountain bike trails, and so forth.

The backbone of this zone remains the natural open spaces. Although this zone is perhaps less ecologically diverse, and hence is not the hub of the nature-based programs, it does not diminish its value as natural open space that is worthy of the same level of protection as that of the Preserve Zone.

Although restraint is shown toward expanding the development footprint, providing needed facilities also remains a vital aspect of the master plan, as the lodge at Camp Sacajawea underscores.



The Buffer Zone is essentially the area on the periphery of the park where external influences impose upon the park atmosphere.

Development Zone

As identified on the aerial map, a number of existing and proposed development areas are located within or on the periphery of the larger zones defined above. Whereas in each of these areas past and proposed uses and functions remain viable, the intent of the master plan is to minimize the extent of the built footprint while still providing a desirable level of service to the community. In some cases, such as the Schulze Lake area and Camp Sacajawea, controlled expansion of facilities is called for under the master plan to meet current and future needs. But even in these cases, efforts were made to stay within the existing development area to maintain the integrity of the natural areas that surround them.

As figure 5.1 illustrate, a couple of development areas will actually be relocated. The most extensive of these is removing the maintenance facility from the core of the preserve zone to the periphery of the site. This was done to eliminate unnecessary incursions into the Preserve Zone, especially when the facility offers little direct benefit to the park visitor. The only other significant relocation related to the equestrian trailer parking lot, which will remain in the same general area, but moved closer to the park's periphery to minimize unnecessary encroachment into the preserve zone.

Buffer Zone

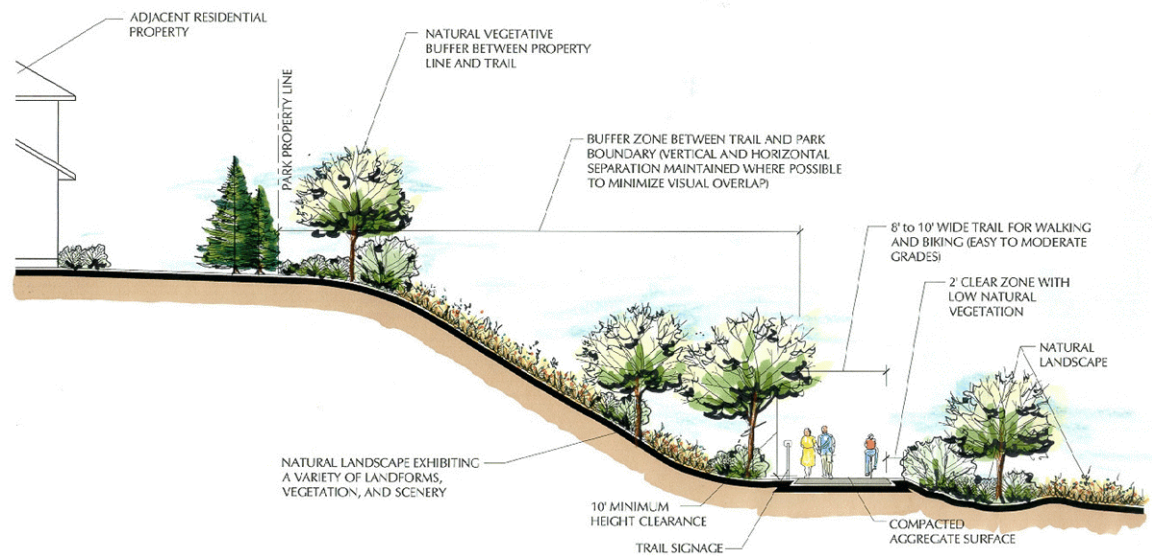
The Buffer Zone is essentially the area on the periphery of the park where external influences impose upon the park atmosphere. From a master plan perspective, the intent is to avoid locating trails and other built features within this zone to maintain a sense of separation between the park user and the adjacent land uses – which range from very busy roads to housing developments. By and large, trails (especially the connector trails) will be placed on the park side of these buffer zones wherever possible to avoid visual overlap with areas outside the park.

As shown in figure 5.1, the width of the Buffer Zone is relatively consistent, although it does respond to variabilities in terrain, vegetation patterns, and visual factors associated with adjoining land uses. In practice, the buffer zone width is a combination of vertical and horizontal distance that together provide a reasonable degree of buffer between park uses, especially trails, and adjoining land uses, especially residential properties. The figure on the next page illustrates this relationship in a character sketch.

Visual separation between trails and off-site development, like this golf course, is desired where possible.



Figure 5.2 – Character sketch of Buffer Zone between connector trail and adjacent land use.



As the character sketch depicts, the Buffer Zone’s value works both ways, meaning that the adjacent land use is effectively screened from the trail user and vice versa. Note here that while the intent is to provide a degree of separation throughout the park, the variability of conditions found will preclude this from being absolute. In some cases, sight lines may not be completely screened. There will also be a need to work with individual land owners using an array of cost-effective enhancements to provide a reasonable level of buffering.

An important side note about the Buffer Zone is that there is no discernable distinction between the ecological stewardship of this zone and the Preserve or Open Park Land Zones. In each case, stewardship programs will be based on ecological values, rather than land use zone distinctions.

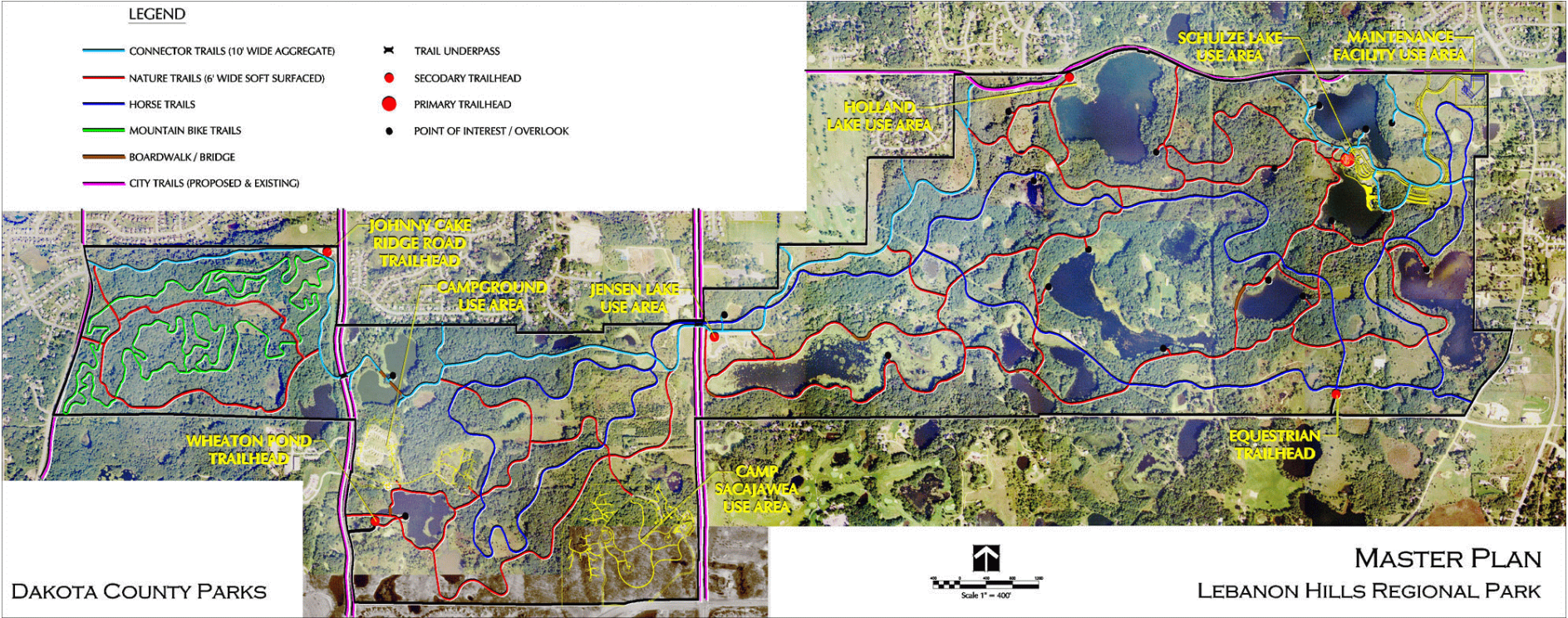
Development Program

The development program defines the recreational and educational uses of the park and the facilities to support those uses.

The development program defines the recreational and educational uses of the park and the facilities to support those uses. The program is an outgrowth of research on recreational trends, the public participation process, and an assessment of the success of past park uses. Figure 5.3 illustrates the development master plan for the park and identifies the primary development components. A description of each of these components follows thereafter.

As stated under the Development Zone discussion, showing due restraint with respect to the development footprint while serving the needs of the public was a key underpinning for the master plan. This is especially true regarding the development program, where public sentiment was clearly focused on minimizing the built footprint to the degree possible. The development program seeks to find a responsible balance between providing facilities and amenities that allow the public to enjoy the park without compromising its inherent natural qualities.

Figure 5.3 – Master plan for Lebanon Hills Regional Park.



Internal Trail System – Summer Use

The trail system within the park has been and will continue to be the backbone of the development program.

Four primary types of summer trails are provided under the master plan.

Existing trail alignments will be taken advantage of where it makes sense to do so, as with this trail adjacent to Jensen Lake.



Much effort will be put into shaping the trail system in response to found conditions.

The trail system within the park has been and will continue to be the backbone of the development program. Research and public input suggest that the vast majority of visitors will be coming to the park to use the trail system. Although the internal trail system will be fairly extensive and offer a variety of park experiences, excessiveness was also avoided to preserve the values that one comes to the park to enjoy.

As shown in figure 5.3, four primary types of summer trails are provided under the master plan. Trail types, along with their estimated mileage, are defined in the following table.

Trail Type	Estimated Existing Mileage	Proposed Mileage Under Master Plan
Nature Trails	12.2 miles	14.8 miles
Connector Trails	0.0 miles	5.1 miles
Equestrian Trails	10.4 miles	9.7 miles
Mountain Bike Trails	2.5 miles	4.5 miles

Trail Alignments and Mileage

As a working model, the intent of the master plan is for trails in all classifications to follow alignments that respond to, rather than extensively alter, the natural contours and features of the land. Trail locations will also focus on enhancing the user’s experience through sequential and varied settings, ranging from intimate pond-side trails to broad vistas across a prairie landscape. In many cases, the proposed trail system takes advantage of the existing network of trails, albeit their functional use may have changed to eliminate overlaps and gain efficiencies. Also, some of the existing trails need to be rerouted due to erosion problems and poor alignments.

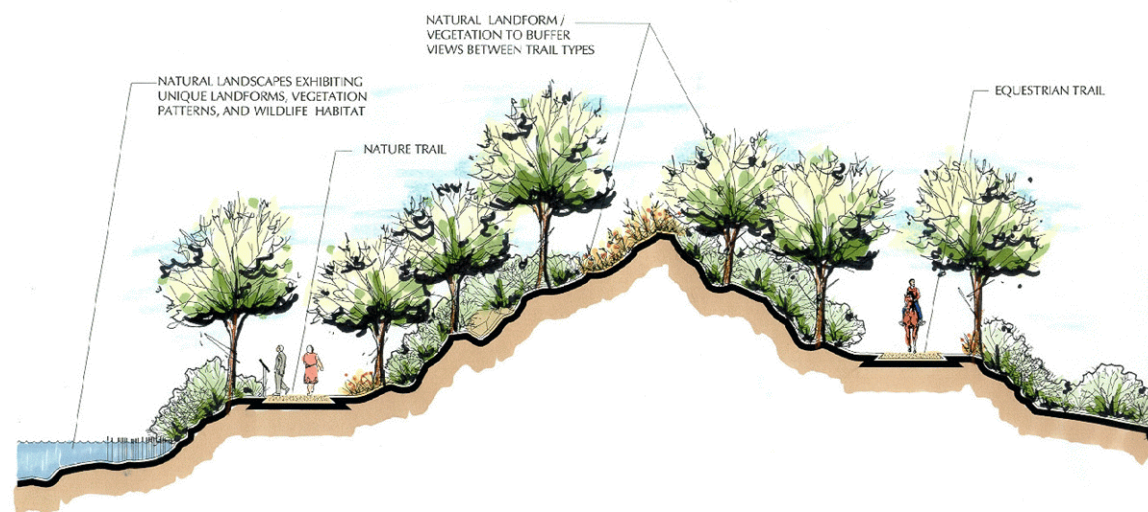
Much effort will be put into shaping the trail system in response to found conditions. In many ways, the nuances of the land forms found within the park are its very appeal to a trail user, which one would not want to diminish. However, an important qualifier to this is that although the intent is to minimize changes to land forms, in reality there will be instances where additional work will be required in order to make critical linkages or to ensure that a given trail is accessible. Although the master plan went to extra lengths to illustrate alignments thought to respond to the landscape, greater scrutiny of trail alignments will still be required at the point of implementation to ensure that routes chosen are the ones that make the most sense.

The same point made above also holds true for determining the ultimate overall trail mileage that the park can sustain. Although the trail system as presented is thought to provide a responsible balance between human access and nature, actual “in the field staking” will ultimately be required at the point of implementation to ensure that the park experience is not diminished as the trails are laid out and trail mileage accumulated.

Relationship Between Trails and Trail Types

Although the trail system will be fairly extensive, physical and visual overlap between trail types and other park amenities is intended to be kept to a minimum. This will provide the trail user with a sense of solitude that is in keeping with the sense of place that the park offers. Figure 5.4 provides a character sketch of the general interrelationship between trail types that is being sought.

Figure 5.4 – Character sketch of relationship between trail types.



Although the trail system will be fairly extensive, physical and visual overlap between trail types and other park amenities is intended to be kept to a minimum.

Visual overlap between trail uses can be distracting to the trail user. Thoughtful layout of the various trails should reduce the incidence of this occurrence in the future.



Although the trail system plan is thought to provide a reasonable balance of trail types, the detail layout of the trails will require additional scrutiny at the point of implementation to assure that alignments provide a sequence of events and terminus points that are pleasing to the trail user.

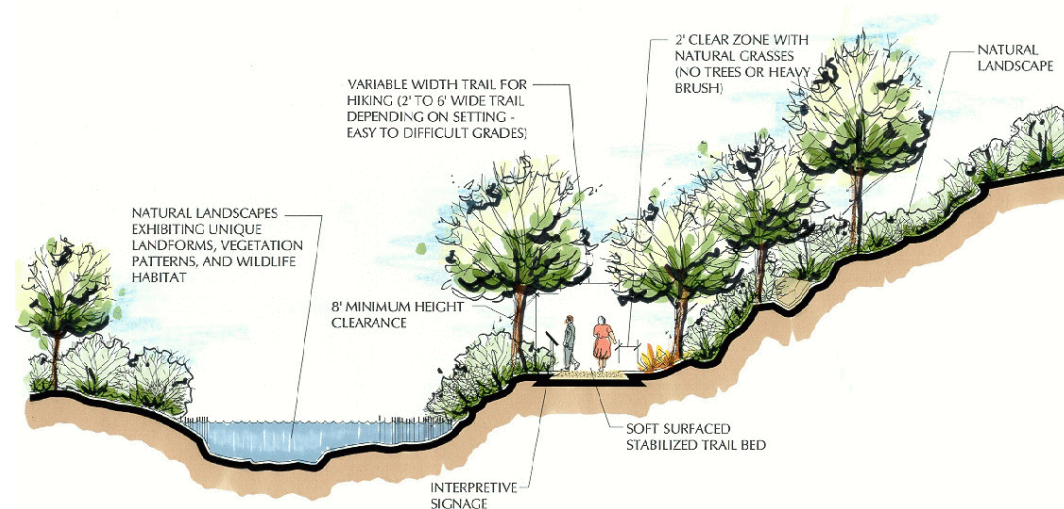
Note that although visual and physical separation between trails is most often desired, this will not be entirely exclusive given inherent site conditions in some instances. Also, a limited degree of interaction between trail users can be desirable as long as it does not detract from the overall experience of either one. For example, a young child walking through the park may find watching a horse to be fun and exciting, thus adding to their experience. Given the overall size and character of the park, the opportunity for an extensive yet unobtrusive trail system is one of the major features of the master plan. The following considers each of the summer use trail types in greater detail.

The relationship between the park trails and those of local trail systems is also important. As shown by the trail plan, numerous points of interconnection with the local trails are shown. The plan as laid out provides reasonable access from these trails without going overboard.

Nature Trails

Nature trails will be the most extensive of all the trail types and will focus on the natural setting and nature interpretation (formal and casual). These trails will offer an intimate character for those seeking solitude, reflection, and a quiet walk in the woods. Figure 5.5 provides a character sketch of a typical nature trail setting within the park. As shown in the illustration, use of the trail will be limited to hiking and jogging.

Figure 5.5 – Character sketch of nature trail setting.



Putting people in a position to enjoy the natural values of the park is what the nature trails are all about.



Adding simple nuances along the nature trail, like this boardwalk, add interest to the experience, as well as bridge low areas.



From a design standpoint, nature trails will vary in width from two to six feet, depending on the setting, extent of use expected, and the terrain being traversed. However, an important side note to this issue relates to winter use of many of these same trails for skiing. Although an intimate, narrow design is desired, layout of the trail will also have to allow enough room for the grooming equipment needed to maintain the ski trails. Although this may seem counter intuitive, this should not be as challenging as it might seem. Once the restoration of the vegetative communities is underway, many of the areas now choked with undergrowth will actually be opened up. So in reality, establishing a nature trail route through a savanna or prairie can still follow the optimal width standard, while at the same time not precluding its use for ski trails by mowing a wider strip along the trail in the fall.

Surfacing of the nature trails will also require some flexibility. Where feasible, grass or compacted native soils remains desirable, especially in areas of less use. In reality, increasing levels of use will require a more aggressive approach to this issue as time goes on. This will likely include the use of compacted aggregate in heavily used areas or areas prone to erosion. Although this may seem quite undesirable to many trail users, the careful selection of surfacing materials (color, texture, etc.) and the use of organic-based stabilizers can substantially avoid many of the visual characteristics often associated with a more “developed” trail while still reaping the benefits.

Retaining the intimacy of the nature trails is an important objective, while at the same time providing enough space for winter trail use. Note that much of the undergrowth shown here, which is mostly buckthorn, would be eliminated as native plant communities are restored.



One of the hallmarks of the park is the diversity of experience that can be gained by walking through the different sections, each having its own unique qualities.

The degree of difficulty of the nature trail system within the Preserve Zone will vary considerably to appeal to the varying expectation of trail users.

Figures 5.6 and 5.7 provide character sketches of trail cross-sections to illustrate the variability of how trails will look depending on the circumstance found in the field.

Figure 5.6 – Character sketch of nature trail where space is limited.

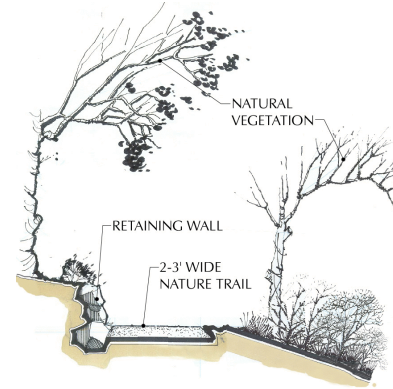
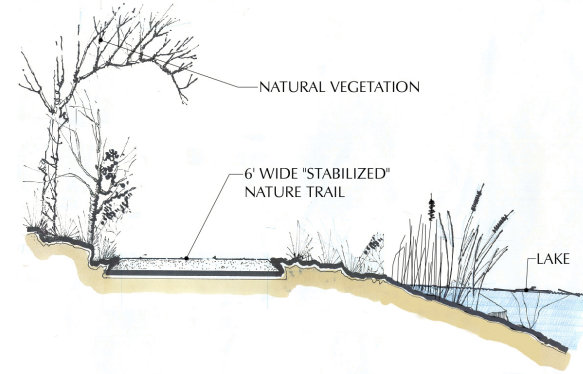


Figure 5.7 – Character sketch of nature trail where foot traffic is heavier.



A more stabilized trail can actually result in *reduced* ecological and visual impacts by reducing erosion, keeping the trailway narrower, and helping to prevent trail “creep” and trampling. The latter of these is unfortunately occurring with greater frequency in areas of heavier use and areas where the trail is prone to being unstable during wet periods. This is especially evident along popular trails such as the Jensen Lake area, where something needs to be done in the near term to retain the natural values of this wonderful trail loop.

As for trail locations, one of the hallmarks of the park is the diversity of experience that can be gained by walking through the different sections, each having its own unique qualities. On the eastern side of the park within the Preserve Zone, the nature trails will be quite diverse and traverse through all of the major ecological zones. The trail lengths will vary to provide opportunities for short and extended outings. Whereas many of these trails will be part of the defined interpretive program, others will simply be routes through the natural setting and provide a variety of sequences, points of interest, and destinations for the trail user. The width of the trails in the Preserve Zone will be dictated largely by the terrain encountered, whereby a given loop could be wide enough for two people to walk side by side or be narrowed down to a couple of feet where space is more limited. In some instances, heavier use patterns will warrant the use of a more stable surface, as noted earlier. The loop around Jensen Lake and those nearest the Visitor Center where use is expected to be the heaviest would likely require this type of surfacing to forestall any erosion and trail creep problems that might manifest themselves.

The degree of difficulty of the nature trail system within the Preserve Zone will vary considerably to appeal to the varying expectation of trail users. In some cases, universal accessibility will be adhered to, especially with respect to the interpretive trails that support educational programs. On the other end of the spectrum, some of the trails will be steeper and narrower to appeal to the more adventurous and able-bodied individual. The intent is to maintain the diversity of experience to which park users have become accustomed.

Simply designed trail features, such as this bridge, will be used as needed to complete the nature trail loops.



The amenities found along the nature trails will generally be limited to benches, overlooks, fishing platforms, and wildlife blinds.

The primary functions of connector trails is to link major development areas together into a cohesive whole.

The connector trails purposefully traverse through the park in a linear fashion near the periphery of the park.

On the west half of the park within the open park land zone, the nature trails will also be quite diverse and traverse through numerous ecological zones. In this case, the primary focus will again be on providing a variety of sequences, points of interest, and destinations for the trail user. Whereas formalized interpretive signage may be added to some of these trails to support educational programs at Camp Sacajawea, it will not likely be as extensive as that proposed for the eastern half of the park where most of the interpretive programs will be run.

The width of the nature trails in the open park land zones will again be dictated largely by the terrain encountered as previously defined for the Preserve Zone. Here too trails that receive heavier use patterns will warrant the use of a more stable surface, such as compacted fine aggregate, in some locations. The loop around Wheaton Pond and from there over to Camp Sacajawea, where use is expected to be the heaviest, will perhaps require this type of surfacing. The connection from Wheaton Pond to the campground also falls into this category.

As within the preserve zone, the degree of difficulty of the nature trail system within the open park zone will vary considerably to appeal to the varying expectation of trail users. With respect to universal accessibility, the trail around Wheaton Pond would be a key trail to focus on given that those using the campground – which is likely to be an increasingly older population – a chance to experience the natural values of the park.

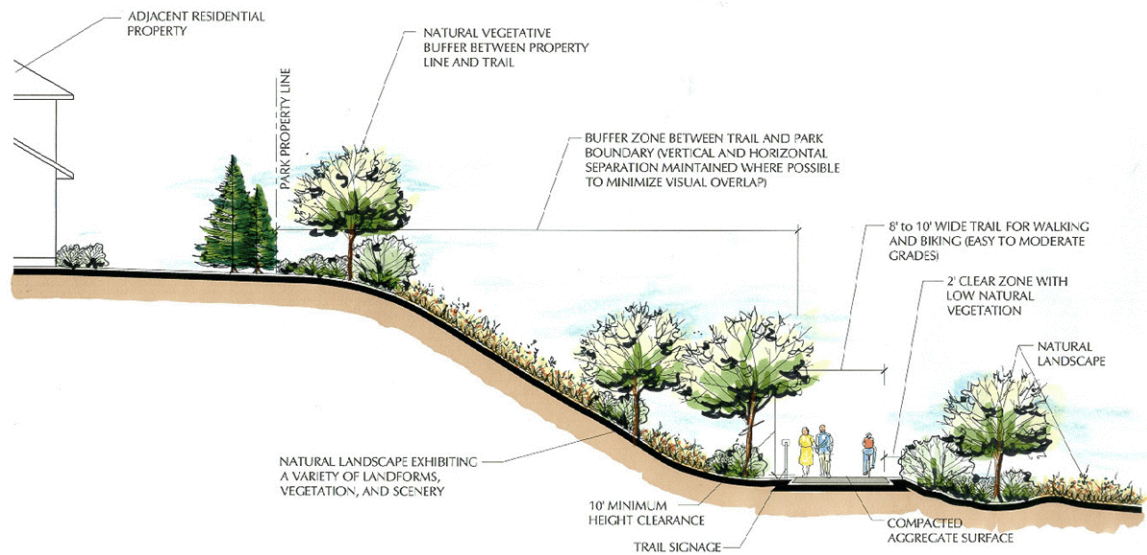
The amenities found along the nature trails will generally be limited to benches, overlooks, fishing platforms, and wildlife blinds. Boardwalks (fixed and floating) will also be used to bridge low or open water areas as needed. All of these features would be simple in design and natural in character to be compatible with the natural setting. (The forthcoming section on these features should be referred to for additional information.)

Connector Trails

The primary functions of connector trails is to link major development areas together into a cohesive whole. While the natural setting for these trails remains very important, emphasis is also placed on providing a higher degree of accessibility for the less ambulatory and greater consistency in terms of grades, trail width, and surfacing. By design, these trails will provide a higher level of service to those that still desire a “walk in the woods”, but prefer to do so on a less physically challenging trail. In addition, connector trails expand the user base to include other user groups, like recreational bicyclists, whose opportunity in the past to enjoy the park has been very limited. These trails will also serve the needs of families, small groups, and older individuals that want to enjoy the park, but are less inclined or unable to use the inherently more difficult and less consistent nature trails.

As shown on the map in figure 5.3, the connector trails purposefully traverse through the park in a linear fashion near the periphery of the park. This was done for a couple of reasons. First, the topography along this route is the least challenging in terms of trail gradients and sight lines, making it reasonably accessible to a majority of walkers and appropriate for recreational bicyclists. Secondly, locating the trail as shown minimizes the potential for conflicts and confusion with the nature trails, which was of considerable concern to those giving input during the public process. While connector trails do not immerse a user in the park as a nature trail would, it still provides an very pleasant outdoor setting that exposes a person to what the park offers.

Figure 5.8 provides a character sketch of a typical connector trail setting within the park.
Figure 5.8 – Character sketch of connector trail setting.



Note that a looped connector trail was considered for the middle section of the park as a means to connect the primary development areas together. However, the terrain between Wheaton Pond and Camp Sacajawea proved too limiting to meet desirable design guidelines for connector trails. As shown on the trail map, this trail was reclassified as a nature trail, where greater flexibility on its design is appropriate.

As for detailed trail alignment, an “in the field staking” approach will again have merit to ensure sensitivity to the natural features of the land. In addition, attention needs to be given to the technical design of the trail to ensure it is safe for the intended use. As shown in figure 5.8, a distinct buffer zone is also proposed to maintain a degree of visual separation between the trail and adjoining land uses. As shown, the buffer zone is defined in terms of vertical and horizontal separation, with the objective being to use the land forms and enhancements to create a reasonable buffer between uses. Whereas the exact buffer zone dimensions are subject to site specific design considerations, the trail alignment as shown on the map was laid out with input from numerous adjacent property owners who participated in the planning process and reflects an acceptable location at this level of detail.

As also indicated in figure 5.8, the trail width is shown at eight to ten feet, which provides enough room for two people to walk side-by-side and allow a passerby to continue along. With respect to trail surfacing, general public support was decidedly for the use of compacted aggregate over asphalt for the connector trails at this time. Public sentiment was that aggregate was more in keeping with the character of the park and that it tends to keep bicycle speeds a bit lower.

As for detail trail alignment, an “in the field staking” approach will again have merit to ensure sensitivity to the natural features of the land.

General public support was decidedly for the use of compacted aggregate over asphalt for the connector trails at this time.

A remedy to stability, maintenance, and accessibility issues with aggregate trails is using an ecologically-sound stabilizer in the trail material mixture that “holds it together” while retaining its natural appeal and qualities.

Note, however, that while an aggregate trail is clearly preferred, it does pose some concerns related to long-term stability, maintenance, and accessibility. A remedy to this is using an ecologically-sound stabilizer in the trail material mixture that “holds it together” while retaining its natural appeal and qualities. The photos below illustrate previous applications of such a product in similar settings. Note also that even with a stabilized aggregate, some user groups, like in-line skaters, will not find the trails very accessible. This is a tradeoff that was recognized and accepted by the public in the context of this park setting.

Stabilized trail in Chequamegon National Forest, Wisconsin.



Stabilized trail in Marin County Open Space Park, California.



Whereas stabilized aggregate is a reasonable approach for surfacing connector trails (as well as erodible nature trails), its history of use in this region is limited. As such, Dakota County will need a degree of latitude in the design of these trails and addressing any maintenance issues that may arise, such as washouts on steep slopes. This may include using asphalt on steeper sections if maintenance problems arise.

Other key features of the connector trail system include a floating boardwalk across Gerhardt Lake and underpass under Johnny Cake Ridge Road. The boardwalk is proposed due to the grade limitations in this area, which may not allow for the trail along the edge of the lake. (Note, however, that alternatives to the boardwalk should still be explored during implementation, including routing the trail along the lakeshore if site constraints are manageable.) The underpass is needed to connect the western section of the park to the middle and eastern sections. Note also that at each underpass location shown on the master plan, trail connections need to be made to the adjoining trails along the roadways so that trail users can cross the road via the tunnel rather than at grade.

Equestrian Trails

Equestrian trails have a long history in the park and have a consistent user base.

Equestrian trails have a long history in the park and have a consistent user base. In addition to private citizens using the trails, the Diamond “T” Stables, which is a for-profit enterprise, uses the trails extensively for horseback riding. Even if the Diamond “T” would discontinue use of the trails, the demand for them is established. A consistent group of frequent and occasional riders use the park throughout the spring, summer, and fall. Given the demand, the master plan maintains an extensive equestrian trail system, albeit with a significant degree of realignment to improve its interrelationship with the other trails.

From a design standpoint, the equestrian trails have many similarities to nature trails.

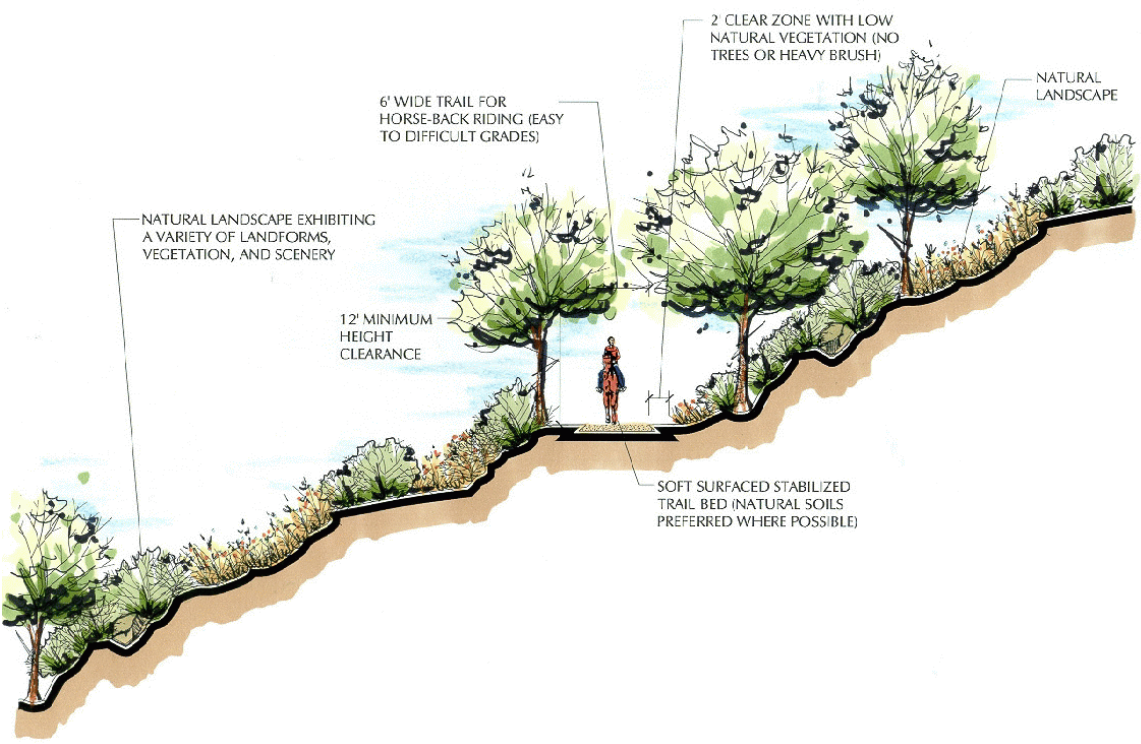
Involving this user group in the selection of surfacing material for these trails would improve the quality of the experience and reduce long-term problems with erosion and trails breaking down from use.

Narrowing some of the horse trails is needed to improve the riding experience and reduce ecological impacts.



From a design standpoint, the equestrian trails have many similarities to nature trails. A strong focus on the natural setting and an intimate character for those seeking solitude, reflection, and a quiet time in the woods. Figure 5.9 provides a character sketch of a typical equestrian trail setting within the park. As shown in the illustration, use of the trail will be limited to horseback riding in the summer months.

Figure 5.9 – Character sketch of an equestrian trail setting, which has many similarities to that of the nature trails.



The equestrian trails will typically be six to eight feet in width, with a two foot clear zone on either side to allow for passing horses in either direction. This width is actually a narrowing of many of the trails now found in the park, especially in the area of the Diamond “T” where use tends to be concentrated. This is an important point in that a narrower trail is more interesting to the trail user and is much more ecologically sound and aesthetically appealing. Surfacing of these trails will range from grass and compacted soils in areas of less use to a more stabilized trailbed in areas of more extensive use or areas prone to erosion. Surfacing in these areas could range from shredded wood to stabilized compacted aggregate as proposed for the connector trails. Incorporating channels, “water bars”, and “grade dips” and managing trailside water flow to prevent erosion are also important design considerations. Given the specialized nature of horseback riding, involving this user group in the selection of surfacing material for these trails would improve the quality of the experience and reduce long-term problems with erosion and trails breaking down from use.

An intimate trail setting is as desired by the horseback riders as it is by nature trail users.



The master plan calls for a phased approach to expanding the mountain bike trail system within the park.

Eliminating conflicts with other trails and rerouting those that are unsafe is a first phase priority for the mountain bike trails.



As for trail alignments, the master plan provides a series of loops that offer a diversity of landscapes similar to that of the nature trails. The trail loops shown on the plan vary in length to provide opportunities for short and extended outings. With respect to layout of trail alignments, here too the user group could add insight as part of the detail design process to create a trail system that offers the experience most desired. Important considerations in this regard include providing areas where the horse would be walked through and areas where the rider can “open it up” a bit more – as long this does not pose any safety concerns. In all cases, good sight lines at trail crossings are important to preventing conflicts with other trail users and spooking horses.

The amenities found along equestrian trails will include typical features like benches and overlooks. Tie off rails at stopping points are also needed. Another important trail amenity is providing places for horses to enter pond edges and lakes to drink and cool off. The small pond that lies along the equestrian trail southwest of Holland Lake is one example of a location currently being used (and well liked) for such a purpose. Important to this discussion is making sure that the design for these water access points takes into consideration any ecological issues and defines ways to prevent or mitigate any impacts. Also, access to water will be restricted outside of designated spots.

Mountain Bike Trails

The existing mountain bike trails within the park have proven to be popular with a strong core group of riders that routinely use the trails. Unfortunately, the high level of difficulty and limited length of the existing trails are limiting factors in their use. Equally important, the ecological impacts of poorly designed sections are of noticeable concern to park advocates and mountain bikers alike. The safety (in terms of injury from falls) of the trails along these same sections are of concern to the mountain bikers as well. Given these issues, coupled with a clear desire to enhance mountain biking opportunities in a responsible fashion, the master plan calls for a phased approach to expanding the mountain bike trail system within the park. This will be done in a manner that provides a safe and interesting riding experience while at the same time being sustainable from an ecological perspective. Figure 5.10 on the next page provides an overview of the mountain bike trail system and its interrelationship with other trails in this area.

Under the first phase of redevelopment, the focus would be on eliminating trail sections that are unsafe and realigning those that conflict with other trail types. Under this phase, the length of the trails would also be expanded to provide a more legitimate overall system that offers varying levels of difficulty. Currently, there are approximately 2.5 miles of trails. Although the master plan illustrates up to approximately 4.5 miles of trails within the same general area, it is expected that it would take several phases to achieve that length. The rationale for this incremental expansion is to make sure that each change made to the trail system proves to be successful in terms of safety, ecological sustainability, and public acceptance.

Note here that the mountain bike community has been very engaged in the planning process and have shown a desire to work collaboratively with Dakota County on the design and implementation of an expanded trail system. Of equal importance, they can bring to the discussion working knowledge of trail design standards that have proven successful.

Advocates for mountain bike trails can provide valuable support, including help with construction, signage, and maintenance.



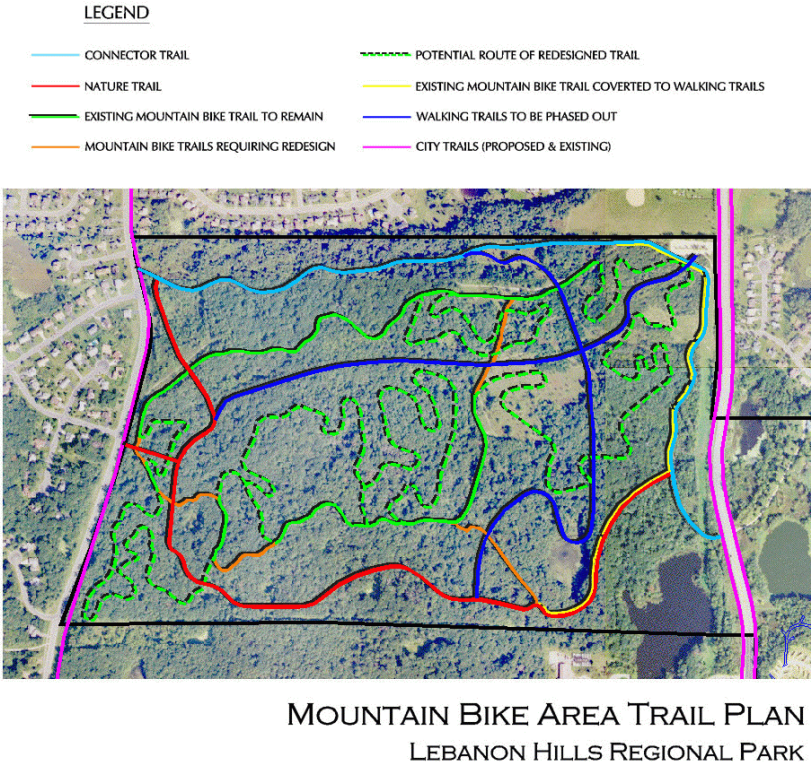
Advocates for these trails have shown a willingness to participate with Dakota County in managing and “self-policing” these trails to help ensure their responsible use, avoid conflicts with other trail users, and maintain the ecological integrity of the area.

As an example of their commitment to a quality, well-designed and sustainable trail system, the Minnesota Off-Road Cyclists (MORC) can bring a variety of resources in support of the County, including:

- ▶ Trail design recommendations to provide low-impact sustainable trails.
- ▶ Trail construction with volunteer labor.
- ▶ Funding and installation of trail signage.
- ▶ Information kiosks.
- ▶ Organized multi-annual maintenance sessions.
- ▶ Preparation and submittal of grant applications for trail construction. (Dakota County will have to approve all ground altering activities in advance to ensure compliance with the various requirements that apply.)

Also of importance with respect to user group involvement is the on-going management of the facility. Advocates for these trails have shown a willingness to participate with Dakota County in managing and “self-policing” these trails to help ensure their responsible use, avoid conflicts with other trail users, and maintain the ecological integrity of the area. With the eye of other park advocates always being watchful in situations like this, any commitments that can be made and followed through with by this user group will prove beneficial in ensuring that the mountain bike trails will remain valuable in the mix of facilities provided within the park.

Figure 5.10 – Mountain bike trail system and related trail interfaces and issues.



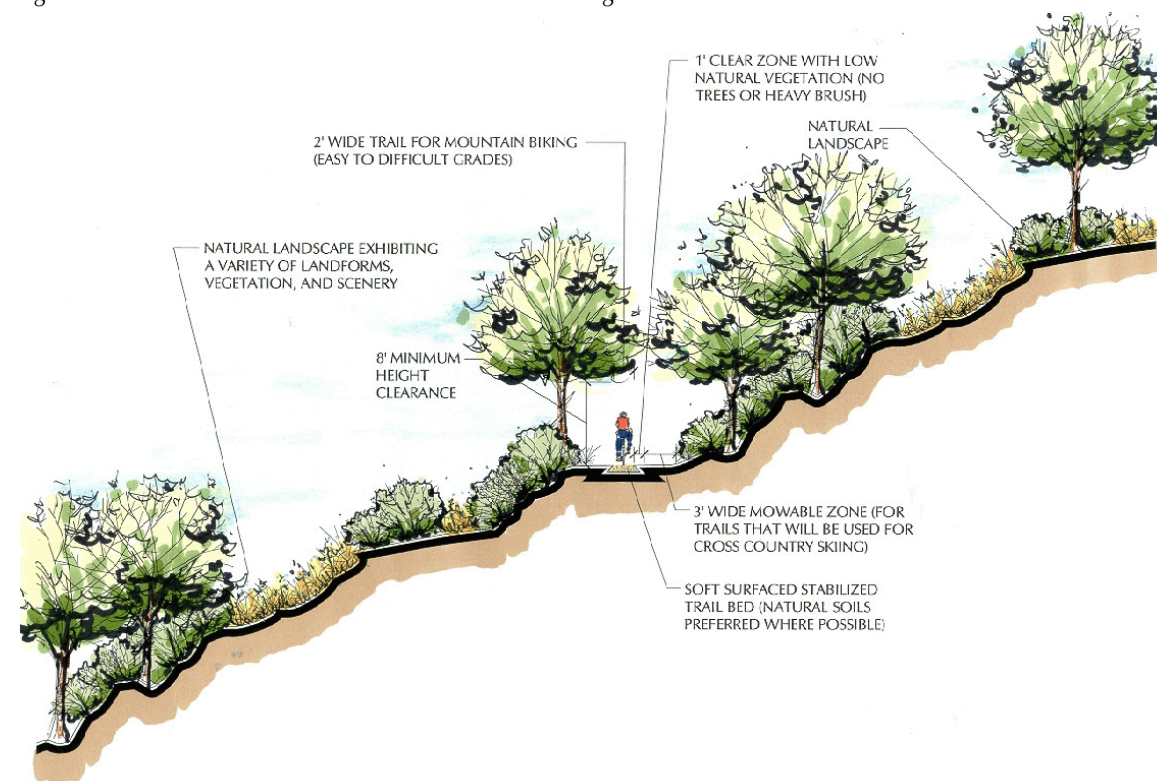
Well-designed mountain bike trails are challenging yet safe for the user.



The intent is to make the course challenging while at the same time keeping the speeds down for safety and reducing the propensity for erosion and other ecological impacts.

From a design standpoint, the mountain bike trails would consist of multiple, one-directional loops of varying degrees of difficulty. As figure 5.11 illustrates, the trail width would be ideally two feet in width with a soft-surfaced stabilized trail bed. In some cases, however, the “mowable” trail width would be wider to accommodate the winter use of portions of the trail for skiing.

Figure 5.11 – Character sketch of mountain bike trail setting.



Although grades would vary considerably, efforts would be made to reduce the potential for erosion and washouts. Water checks, grade dips, and other erosion prevention techniques would be used as part of the trail design to avoid these problems. The design for the trails would also focus on technical riding skills over speed. The intent is to make the course challenging while at the same time keeping the speeds down for safety and reducing the propensity for erosion and other ecological impacts.

With respect to the interrelationships with the hiking trails in the area, the layout of the mountain bike trails would strive to minimize trail crossings and visual overlap to the degree possible, as shown in figure 5.10. The vegetative patterns and topography in this area should make that reasonably achievable. Effective trail signage will also be important to minimizing use conflicts between trail uses in this area.

To avoid taking away from the experience itself, the design for all of these amenities will be purposefully simple to be in keeping with the natural setting.



Simple sitting areas blended into the landscape is the design intent, as this photo taken at the Minnesota Landscape Arboretum illustrates.



Trailside Amenities, Points of Interest, and Overlooks

The inherent character of the park creates many natural points of interest for the park user to enjoy. The intent of the master plan is to use the trails, trailside amenities, and overlooks to put people in a position to enjoy these points of interest. To avoid taking away from the experience itself, the design for all of these amenities will be purposefully simple to be in keeping with the natural setting. The following figures provide a number of sketches that illustrate the character that is being sought for these features of the park.

Figure 5.12 – Character sketch of pond overlook.

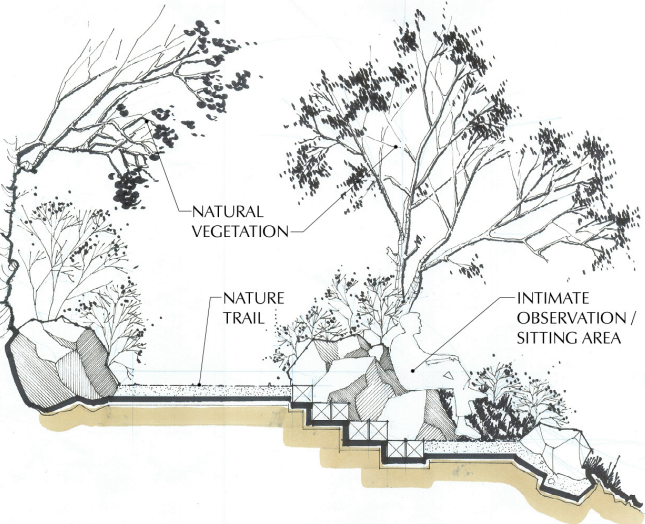


Figure 5.13 – Character sketch of trailside sitting area.

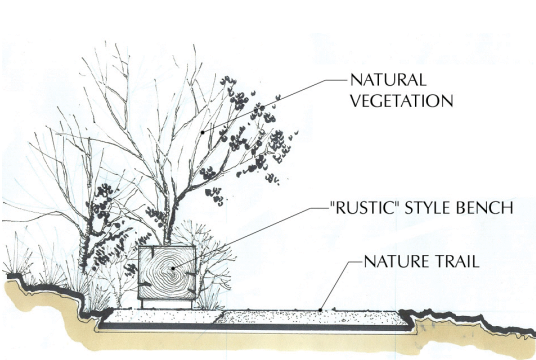
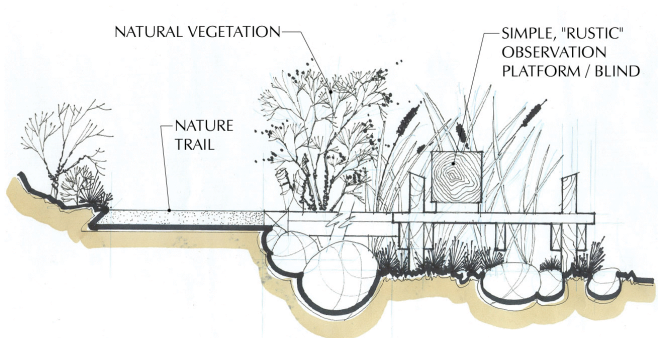


Figure 5.14 – Character sketch of lakeside observation area.



Another important aspect of siting the trailside amenities is controlling the field of view from specific points of interest to preserve the aesthetic value of what is being observed. As the photos below illustrate, the careful placement of trails and trailside amenities is critical to preserving the experience that the park visitor is seeking. As a side note, providing drinking water at appropriate locations is also in order.

Primary and Secondary Trailheads

The primary and secondary trailheads, as defined on the overall park master plan map, provide key access points to the trails within the three main sections of the park.

In total, there are six trailhead locations being proposed.

The dispersed trailhead approach spreads out trail access points and trail use across a greater percentage of the park.

The overall master plan identified a number of locations that offered points of interest worthy of being noted. However, these only represent a small portion of the possible locations for sitting areas, overlooks, and observation blinds that would add value to the trail experience. In reality, final determination of points of interest will occur when the trail plan is implemented and decisions are made in the field as to the most advantageous location for these features and whether is best viewed from a bench, big rock, or wildlife blind.

The primary and secondary trailheads, as defined on the overall park master plan map, provide key access points to the trails within the three main sections of the park. In total, there are six trailhead locations being proposed. In Lebanon Hills' case, there are a number of compelling reasons in support of a multiple trailhead approach. From a level of development standpoint, taking advantage of the existing infrastructure to the highest degree possible was desired to minimize "development creep" within the park. Second, a dispersed approach also keeps the size of the built footprint at any given location to a relatively small size, which is again in keeping with the general philosophy of showing restraint in development within the park.

From a user standpoint, the dispersed trailhead approach spreads out trail access points and trail use across a greater percentage of the park. One of the primary advantages of this is that it provides trail users with a number of options for exploring different areas of the park within a reasonable walking distance. It also serves to reduce the volume of use a given trail receives, which in turn reduces the propensity for happening upon other people on that trail. This is important in that preserving the sense of solitude is one of the qualities that people come to the park to experience. Since this will be of growing importance and concern in the future as use levels rise, the value of a dispersed trailhead approach will become all that much more valuable.

With respect to the individual trailheads, the primary trailhead falls within the Schulze Lake Use Area, where it is supported by the Visitor Center and other facilities. The remaining five are secondary trailheads that are strategically located around the park. Secondary trailhead locations include:

- ▶ Holland Lake Use Area
- ▶ Jensen Lake Use Area
- ▶ Johnny Cake Ridge Road Trailhead (Mountain Bike Area)
- ▶ Wheaton Pond Trailhead
- ▶ Equestrian Trailhead

With respect to the first two on the list, the trailheads are part of a larger use areas that offers facilities beyond that of a trailhead alone. In these instances, the objective is to combine the trailhead with other facilities to service the need for parking as efficiently as possible. The last three on the list represent standalone trailheads that feature more basic trail support facilities, such as small parking lots, trailhead information and restrooms. Of the six trailhead locations within the park, only the Wheaton Pond trailhead is a new location being proposed. With respect to the trailheads that fall within other use areas, their specific development is defined under the description of that use area latter in this section. As for the stand-alone trailheads, the following gives an overview of their development programs.

The existing parking lot accommodates about 30 cars and is aggregate surfaced.



The existing signage and trailhead information is in need of upgrading (aesthetics and information provided).



Trail interfaces with the parking lot, restroom, and information kiosks need improvement.



Johnny Cake Ridge Road Trailhead

As shown in figure 5.15, the Johnny Cake Ridge Road trailhead is located along Johnny Cake Ridge Road on the northern edge of the park and services the western section of the park. The existing lot accommodates about 30 cars and is gravel surfaced. In addition to servicing park needs, the lot also provides parking for a small neighborhood park in Eagan, although there is no formal agreement to do so. As shown in the photos, the trailhead currently offers only very basic facilities.

From a development standpoint, upgrades to this trailhead are fairly straightforward. With respect to the parking lot, improving its design is needed to gain parking efficiencies. With only 30 somewhat eclectic spaces, the lot often fills up during busy periods. The master plan provides for modest expansion of this lot as demand warrants over time. Keeping the parking lot size to under 60 spaces is desirable to keep its visual impacts in check. (See forthcoming text on demand-based trailhead expansion). From a design standpoint, asphalt paving with some form of curbing is recommended for consistency with other trailheads, maintaining greater control over parking efficiency, and improving ease of maintenance. An improved design will also allow for the removal of the barrier posts around the lot, which are obtrusive to the aesthetic quality of the trailhead area. Although hard surface paving is recommended, managing stormwater runoff in an ecological viable manner is important and in keeping with the philosophy of the park.

Aside from the parking lot, trailhead facilities at this lot will be simple and limited to a small restroom facility or pit toilet, information kiosk, a few benches, a picnic table or two, trash receptacles, drinking fountain, and access from the trail along the local street. Naturally, these will be located near the access point to the trails. From a design standpoint, the restroom building would closely follow the architectural principles of sustainable design being promoted for the visitor center. The structure should also be visually appealing and of a character that blends into the nature setting.

Figure 5.15 – Aerial view of trailhead location.



As for the location of the trailhead, the existing location as shown in the last figure offers certain advantages in that it can service both the parking needs for the regional park and the adjacent local park. Since it is already developed area, it also minimizes any new development impacts. The existing location also opens up some joint development potential and cost sharing possibilities with Eagan to service both Lebanon Hills and the adjoining neighborhood park. Note, however, that additional review of this general area for locating trailhead facilities is warranted at the point of implementation to ensure that the location will service the long-term needs of the park and that the area is large enough to allow the parking area to expand in response to any increases in demand. As shown on figure 5.15, an alternative location for the trailhead is shown for reference.

Wheaton Pond Trailhead

The Wheaton Pond trailhead is a proposed location that would service the relatively large middle section of the park. Although the Jensen Lake trailhead provides access to this area, it is quite a distance from the Wheaton Pond area and hence suggests a need for another small trailhead to service this area effectively.

As shown in figure 5.16, the proposed location for this trailhead is adjacent to Wheaton Pond and south of the campground. Note that this location encompasses an in-holding property that would have to be acquired to accommodate the trailhead. Although acquisition of this property is an issue, the advantage is that the development footprint in this area will actually be reduced even with the introduction of the trailhead facilities.

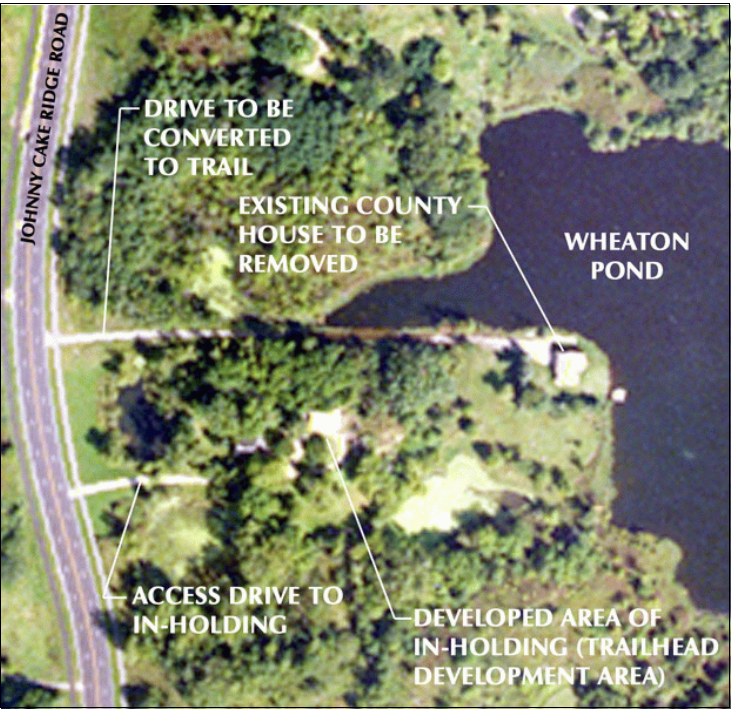
As shown in figure 5.17 on the next page, the trailhead would consist of a small parking lot that accommodates 15 to 20 cars. The only support facilities proposed are an information kiosk, a bench or picnic table or two, trash receptacles, and a nature trail to the Wheaton Pond area. From a design standpoint, asphalt paving with some form of curbing is recommended for consistency with other trailheads, maintaining greater control over parking efficiency, and improving ease of maintenance. Although hard surface paving is recommended, managing stormwater runoff in an ecological viable manner is important and in keeping with the philosophy of the park master plan.

The Wheaton Pond trailhead is a proposed location that would service the relatively large middle section of the park.

This location encompasses an in-holding property that would have to be acquired to accommodate the trailhead.

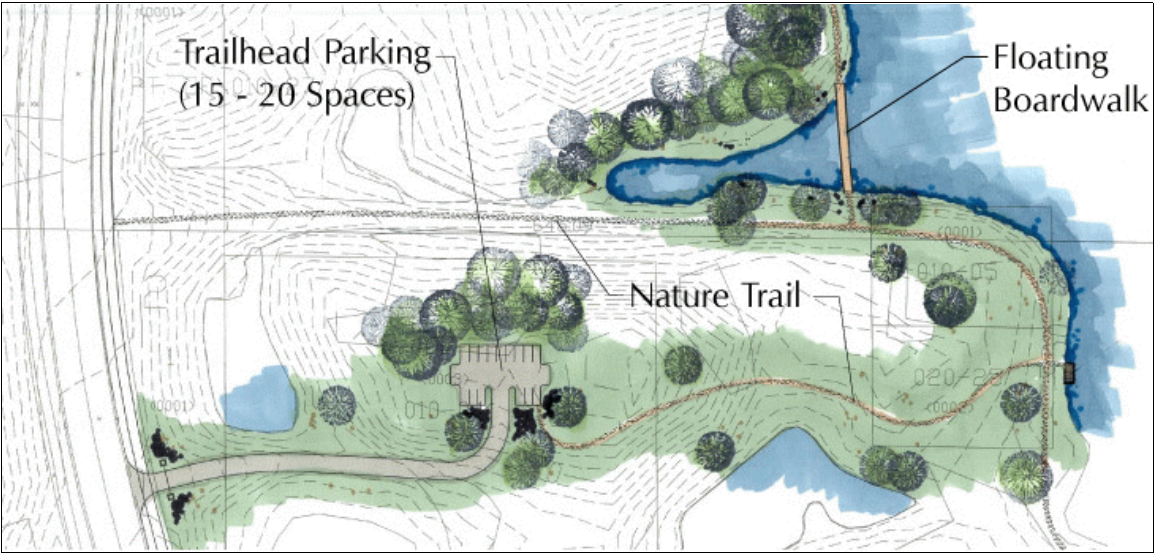
The trailhead would consist of a small parking lot that accommodates 15 to 20 cars.

Figure 5.16 – Aerial view of the Wheaton Pond trailhead area.



A restroom facility is not proposed for this trailhead since it would duplicate the one proposed as part of the contact station for the campground. Since the nature trails in this area link to the campground, access to a restroom from the trailhead is not unreasonable and avoids the need for another structure in the park.

Figure 5.17 – Conceptual plan for Wheaton Pond trailhead facilities.



As the figure illustrates, a pond overlook facility is proposed for Wheaton Pond.

As the above figure illustrates, a pond overlook facility is proposed for Wheaton Pond. Although not part of the trailhead per se, this overlook is an important feature worthy of some discussion of its relationship with the outdoor education programs planned for the campground and those planned by the environmental school across the road. From a design standpoint, the intent is for the overlook to be simple and in keeping with the natural qualities of the park. However, its design will also have to accommodate a class size group of people in the form of a grass seating and lecture area. The overlook itself will also need to provide access to the water's edge for water samples and so forth. The challenge lies in creating a design that fulfills program needs while at the same time not seem excessive and aesthetically imposing. Given the importance of the design to its multiple function, involving the programming staff of the Dakota County Parks Department and the environmental school in the design process will be important as the master plan for this area is implemented.

Given that reasonable access to this area of the park seems warranted and development of the trailhead will actually reduce the size of the built footprint in the area, the timing of its development will be largely contingent upon the timing of acquiring the in-holding where it is located.

The equestrian trailhead is located on the far southeastern corner of the park off 120th Street. This general location is well liked by the equestrian community.

Some of the existing trailhead facilities as shown here will be carried forward as part of the relocation of the lot.



Equestrian Trailhead

The equestrian trailhead is located on the far southeastern corner of the park off 120th Street. This general location is well liked by the equestrian community for a number of reasons:

- ▶ It provides a degree of separation from other park use areas and is natural in character.
- ▶ It allows for horses to be loaded and unloaded in a controlled fashion where they are less likely to be spooked and/or get loose.
- ▶ There is less likelihood for a horse to get loose and end up on a busy roadway and cause an accident.

In recognition of these beliefs, the master plan continues to show the equestrian trailhead in this area, albeit relocated for the following reasons:

- ▶ The existing lot encroaches into an open prairie area in the park that is to be restored.
- ▶ The existing lot is isolated and hard to police given the lack of sight lines from 120th Street, which has resulted in some vandalism to the lot and a greater propensity for unauthorized uses.
- ▶ The two access drives pose unnecessary additional roadway infrastructure that does not add value and result in increased maintenance.

The existing equestrian parking lot would be relocated under the master plan.



Figure 18 – Aerial view of the equestrian trailhead area.



The design for the lot would need to be improved to better serve the vehicles that are actually using it.

With respect to the design for the trailhead, the main feature would be a parking lot similar in size to the existing lot that accommodates up to about 30 vehicles with trailers. However, the design for the lot would need to be improved to better serve the vehicles that are actually using it. To this end, input from the equestrian group is of importance at the point of implementation to ensure that it functions well for the intended use. This holds true for the other facilities at this trailhead as well, where input from this rather specialized user group will make the difference in how well support facilities actually serve their needs.

In this instance, an aggregate surface is desired by the user group to be easier on the horses. However, the drive into the lot could be asphalt if that proved easier to maintain. Although the lot is aggregate, some form of curbing or curb stops should be considered to avoid the need for posts lining the lot, which tend to be aesthetically unappealing. As with all parking lots, managing stormwater runoff in an ecological viable manner is important and in keeping with the philosophy of the park master plan.

Beyond the parking lot, support facilities are relatively simple and include:

- ▶ Pit toilets (or portables in an appropriate enclosure that is aesthetically pleasing).
- ▶ Information kiosk.
- ▶ Tie off rails in strategic locations near the lot.
- ▶ Water pump and water tank (the existing lot has this feature).
- ▶ A few benches and a picnic area with a few picnic tables and trash receptacles.
- ▶ A small open picnic shelter (accommodates one or two picnic tables).

Demand-based Trailhead Facilities Expansion

The development master plan attempts to provide adequate parking to meet the current and anticipated need while avoiding overbuilding parking lots at trailhead facilities.

In the spirit of showing restraint in expanding the development footprint within the park, the development master plan attempts to provide adequate parking to meet the current and anticipated need while avoiding overbuilding parking lots at trailhead facilities. To this end, the size of the lots for each of the trailheads are believed to be adequate to service current needs, with some allowance for expected growth in park visits. However, under this approach, there is greater risk of reaching capacity in a shorter time period than would otherwise be the case if the lots were built larger in the first place. Under a demand-based parking lot expansion approach, monitoring the use of parking lots becomes important to ensure that reasonable access to the park is being provided without overbuilding.

The trigger points for undertaking a review of the demand for parking at a given trailhead would include:

- ▶ Citizen complaints about lack of parking at a particular trailhead.
- ▶ Observed functional capacity use by park staff.
- ▶ Observed parking in un-designated areas by park staff.

Once any of these trigger points are reached, formal review of the parking demand would be undertaken.

An important covenant to this discussion is that providing reasonable access to the park is a fundamental responsibility of the Dakota County Parks Department and is in line with its mission.

Once any of these trigger points are reached, formal review of the parking demand would be undertaken. The protocol for implementing this approach would be based on standard traffic planning practices, albeit modified to deal with the nuances of a regional park setting. Key factors that would be considered include:

- ▶ Determining peak use periods (all seasons).
- ▶ Percentage of time within a peak time period that the lot exceeds functional capacity (typically 85% to 90% of actual capacity to allow for turnover).

An important covenant to this discussion is that providing reasonable access to the park is a fundamental responsibility of Dakota County Parks Department and is in line with its mission. Whereas the agency has to be cautious of providing too much access as to change the experience the visitor has while in the park, taking a demand-based approach to parking does require giving the agency a degree of latitude to address any documented shortfalls if they occur in the future. This approach places a greater burden on the agency to monitor use, share that information with the public, and deal with any shortfalls as they arise. It also requires that the public understand the principles of a demand-based approach and hence recognize that the parking facilities may be expanded as time goes on in line with demand. However, this approach seems to be much more reasonable than simply building larger lots to address occasional peak demands or lots that are never filled to capacity.

Schulze Lake Use Area Plan _____

The Schulze Lake area emerged from the planning process as one of the key use areas within the park.

The Schulze Lake area emerged from the planning process as one of the key use areas within the park. Primary features of this use area include:

- ▶ Visitor Center
- ▶ Swimming beach
- ▶ Primary trailhead
- ▶ Outdoor learning area

Critical to the success of this area are the functional relationships between components and to create a desirable degree of separation while maintaining a sense of a cohesive whole that collectively fulfills development program requirements. Figure 5.19 provides an overview of the master plan for this use area. Each aspect of the plan is considered thereafter in greater detail.

Figure 5.19 – Schulze Lake use area master plan.



After considerable public input and debate, the Schulze Lake use area was selected as the most appropriate location for the Visitor Center and primary trailhead facilities.

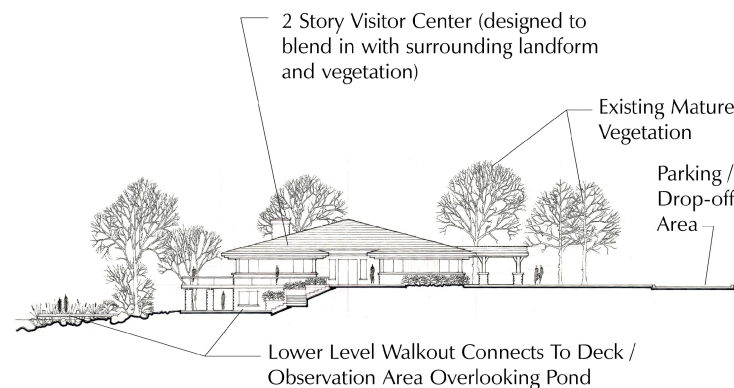
With respect to the visitor center, the focus will be on building a facility that is designed for multiple, year-round uses and provides a variety of services to park visitors.

A key design hallmark for the Visitor Center is its focus on immersion in the educational experience.

Visitor Center, Outdoor Learning Area, and Trailhead Facilities

After considerable public input and debate, the Schulze Lake use area was selected as the most appropriate location for the Visitor Center and primary trailhead facilities. The compelling reason for this was that this area was found to represent a reasonable balance between providing the facilities needed to support park users and programs while avoiding undue ecological impacts by creating a new development area within the park. This latter point was of particular importance given the strong public sentiment for preserving as much open space in the park as possible. Although numerous sites were considered, this location offered greater overall advantages than the others even though it is not the most centrally located site. Under the dispersed trailhead approach as previously defined, locating the trailhead in this area actually proves advantageous in that it helps spread out trail use across more of the park. This is particularly important in the Schulze Lake area where many of the outdoor learning programs will be based. By dispersing the demand for trails through multiple trailheads, the experience one has while using the interpretive trails out of the Schulze Lake area will be more in keeping with the desired park experience.

Figure 5.20 – Character sketch of the Visitor Center building, which will be blended into the landscape to minimize its visual impact.



With respect to the Visitor Center, the focus will be on building a facility that is designed for multiple, year-round uses and provides a variety of services to park visitors, including:

- ▶ Education and learning center
- ▶ Hub of trail system
- ▶ Gathering point for groups and first-time visitors
- ▶ Equipment rental
- ▶ Restrooms
- ▶ Other visitor services

In keeping with the philosophy of minimizing the built footprint, the first floor square footage is likely to be around 5,500 to 6,000 square feet. This size building is expected to meet the programmatic space needs, yet be in keeping with the park's character and sense of place.

A key design hallmark for the Visitor Center is its focus on immersion in the educational experience, whereby the casual visitor or the ardent program attendee would have direct access to displays and information that educates them about the park and its natural environments, history, cultural aspects, and recreational opportunities. Another of its hallmarks is its focus on sustainable architecture that emphasizes reducing the short and long term impacts of buildings on the environment. The principles of universal design would also be incorporated into the design for the building, as well as the surrounding outdoor spaces that are functionally and programmatically tied to the building.

From a building design and program perspective, the Visitor Center is likely to be on two levels to keep the profile of the building as modest and unobtrusive as possible while still meeting space needs.

From a building design and program perspective, the Visitor Center is likely to be on two levels to keep the profile of the building as unobtrusive as possible while still meeting space needs. Conceptually, the first floor, where much of the visitor interface would occur, will likely be at grade level as shown in the previous schematic. The second floor will likely be the basement level with a walkout area. Again conceptually, design program elements found on the first floor would include:

- ▶ Common entry – clearly defined space that interfaces with the drop off area and parking lot. Also sets the tone for the building's architecture.
- ▶ Lobby/reception area – point of initial visitor interface and introduction to the building. Serves to get people out of the elements as they enter the building. Provides basic orientation and park information “at their finger tips”. Also includes coat rack area and other practical spaces.
- ▶ Restrooms – standard facility accessible whenever the building is open. “Family style” restrooms should be considered to expand function and provide a place for people to change clothes.
- ▶ Vending, retail area, and rental “rack” – functional, but not excessive, space for drinks and retail “rack” for selling t-shirts, nature books, etc. that are of interest to people and in turn help support park programs, operations, and maintenance. A space for renting equipment would also be provided.
- ▶ Exhibit and display area – ecological restoration and management mapping, wildlife exhibits, interactive displays, etc. that engage the visitor in learning both formally and casually. Although modest in size, this display area serves a vital purpose in raising peoples understanding of the park's ecological issues and man's role in preserving it.
- ▶ Assembly space/learning center – multi-use and flexible space that accommodates a wide variety of groups, ranging from nature programs to park volunteer get-togethers and so forth.

With respect to the lower, walkout level of the building, the program shifts more to spaces that support first floor uses, including the following:

- ▶ Rental equipment area – skis, snowshoes, canoes, etc. for programs and general park visitors.
- ▶ Program staff space – office and break area for day-to-day staffing needs. Also space for volunteer groups, such as the ski patrol, to store their equipment.
- ▶ General storage – to consolidate storage of materials and equipment that are used on a day-to-day basis to support programs and operation of the park.
- ▶ Mechanical and janitorial room – to serve basic needs of the building.

As shown in the previous figure, the intent of the building design is to blend indoor and outdoor spaces together to the degree possible. This includes windows that take advantage of solar heating, adjoining deck spaces that can be utilized on nice days for programs, and so forth.

With respect to the learning center, the idea is to provide learning opportunities through staff or volunteer-lead programs and activities and through self-guided interpretation.

With respect to the learning center, the idea is to provide learning opportunities through staff or volunteer-led programs and activities and through self-guided interpretation. The latter of these is of particular importance in that the majority of park visitors will gain knowledge in a casual manner rather than through more formal means.

With respect to the outdoor learning area, the key components include an outdoor gathering area that essentially consists of a platform for an instructor and props and simple seating for participants.

The existing beach, which is popular, will remain an important park feature.



Despite attempts to improve its appearance and functionality, the existing beach house is to be phased out and replaced in the long-term.



With respect to the outdoor learning area, the key components include an outdoor gathering area that essentially consists of a platform for an instructor and props and simple seating for participants, which could be grass, wood benches, or some other simple approach. Also in the general Visitor Center area would be a native habitat study area with trails for programmed uses or self-guided learning. This area would dovetail into the ecological restoration and management program and offer direct exposure to the ecological issues facing the park.

Other support facilities associated with this area include secure bike racks to encourage alternate modes of transportation to the park, equipment racks for skis and other forms of equipment, a few picnic tables and trash receptacles in adjoining spaces, and information kiosks at trailhead locations.

Trailhead facilities by and large are incorporated into the above, with the key features being information kiosks outside the building and informational displays inside the building. Ease of access to restrooms and rental equipment areas are also important considerations in the design for the trailhead area.

Swimming Beach

The introduction of the Visitor Center to this use area has some inherent impacts to the beach facilities. The existing beach house will be phased out and rebuilt in a more central location to the beach activity area. With a common public voice, the existing building was found to be aesthetically uninteresting and incongruent with the park setting. From a design standpoint, the interior spaces do not function well in servicing the beach area. Given these issues, making significant improvements or doing any remodeling offers poor return on investment, especially when it is better located elsewhere as shown in figure 5.19

Programmatically, the relocated beach house is relatively straightforward and includes:

- ▶ Restrooms/changing rooms – standard feature that could include “family style” restrooms to gain building efficiency.
- ▶ Concessions – could follow traditional service counter approach or provide self-serve vending machine self-service.
- ▶ Lifeguard/first-aid room – for storage, first aid, and related activities and needs.
- ▶ Storage – adequate for building functions.

From an aesthetic and siting perspective, the key point is to design the building to blend into the surrounding area, complement the style of the Visitor Center, and be of adequate size to meet definable needs as listed above.

With respect to the beach and adjacent areas, the primary master plan objective is to develop the area to be reflective of the natural setting in which it exists – while still fulfilling this well-established recreational need. In support of this, the beach itself is shown to maintain the current sand blanket area, albeit reshaped to create more of an intimate natural swimming “hole” experience. The same holds true for the adjoining grass areas shown on the master plan, whereby the entire beach area ultimately blends back into a very natural setting. Also important is maintaining high water quality (which will be an important consideration in water resources planning for the park).

From an ecological perspective, the entrance road poses significant hydrologic concerns that warrant close evaluation and appropriate action.

Flooding of the entrance road to the Schulze Lake area is an ongoing concern.



Initial evaluation of these variables suggests that relocation of the road has considerable merit.

Additional amenities in the beach area include picnic tables and areas for casual use, volleyball area near the beach, and a small “sand play” structure for young children. Accessible trails from the parking lots to the beach area would also be provided, as would an accessible route to the water’s edge. Also, the existing garage now used for storage would be removed (and perhaps be moved to the campground for storage.)

Entrance Road and Parking

A key consideration of the master plan for this use area is the entrance road and its location. Whereas the existing road does provide access to this development area, there are some significant concerns related to its design and ecological impacts that require close scrutiny as the master plan is implemented. From a design standpoint, the road is subject to repeated flooding that precludes its use upon occasion, especially in the spring or after heavier rainfall. With the addition of the Visitor Center to this area, a very reliable entrance road must be assured.

From an ecological perspective, the entrance road poses significant hydrologic concerns that warrant close evaluation and appropriate action. Since this area of the park is of ecological importance with respect to water management within and downstream of the park, this issue alone is a very compelling, and perhaps definitive, factor behind the need to relocate the road. Since relocating the road will be costly, strong rationale for doing so is needed. Whereas relocating it has some appeal from a design perspective, this alone is not sufficient to warrant doing so if the existing road could be upgraded in the short or long-term to solve current flooding problems. In the end, the rationale for relocating the road revolves around deriving:

- ▶ Discernable ecological value from improving hydrological characteristics of the area west of McDonough Lake.
- ▶ Civil engineering values related to elimination of the road’s flooding problem.
- ▶ Traffic improvements on Cliff Road by relocating the road further to the east.

Initial evaluation of these variables suggests that relocation of the road has some merit. However, this is only a preliminary assessment that warrants a much more comprehensive evaluation as part of the finalizing the water management plan and as part of the implementation of the Visitor Center development package. Ultimately, the completion of the water management plan will determine the merits of moving the road from a stormwater management perspective. (This issue is also considered in the previous section in the context of the Water Resources Plan.)

Assuming that the need to relocate the entrance road is confirmed, the alignment shown in the previous figure will require refinement to respond to the conditions found. This is especially true with respect to avoiding undue impacts to any ecologically-sensitive areas found in the area. Minimizing grading to the degree possible is also desired, albeit some grading will surely be required. Through careful design, it is expected that this new alignment would provide a compelling sense of entry that would set the stage for a visitor’s experience in the park. Also important is working closely with the County Engineer to determine the most appropriate location for the connection to Cliff Road in the short and long-term.

A total of about 220 spaces would be provided, which is only about 33 more than the existing 187 spaces provided.

With respect to parking, the redevelopment of this use area provides an opportunity to redesign the existing lot to better suit the need and be more in keeping with a park setting. As with the other trailheads, keeping the parking lots as small as possible to meet the need is the desired approach. As shown in figure 5.19, a total of about 220 spaces would be provided, which is only about 33 more than the existing 187 spaces provided. Of those 187 spaces, about 120 are routinely used for the beach, which is only used about three months a year. Therefore, providing about 100 spaces over the 120 needed for the beach is expected to meet day-to-day needs of this area during the peak summer season. Overflow parking on grass or prairie areas will also be provided to address peak times of use. Also, parking needs will be monitored as with the other trailheads to ensure that reasonable, but not excessive, parking is provided. As with the other trailheads, the parking lot would be paved and have some sort of curbing to control where cars park.

Trails in Schulze Lake Use Area

The trails in the Schulze Lake use area serve numerous functions. Most notably, they provide:

- ▶ Access to the key facilities located in this area.
- ▶ A stand-alone recreational amenity for hiking, biking, skiing, and so forth.
- ▶ Direct linkage to the larger trail system within the park.
- ▶ Support for educational programs.

The trails in the immediate area of key facilities and trails linking facilities with parking areas and picnic areas need to be fully accessible and of a consistent and stable surface.

From a design standpoint, the trails in the immediate area of key facilities and trails linking facilities with parking areas and picnic areas need to be fully accessible and of a consistent and stable surface. These trails and walkways will need to be hard surfaced, such as asphalt or concrete, in areas providing access to facilities from parking areas. Outside these areas, standards defined for connector and nature trails will be applied. Given that heavier use patterns can be expected in this area, a stabilized aggregate trail surface will likely be warranted for both the connector trails and many of the nature trails that are routinely used for programming.

Jensen Lake Use Area

Photo illustrates the existing picnic shelter and play area (from the parking lot).



The group picnic facility consists of a picnic shelter that accommodates between 150 and 200 people.

As a trailhead, Jensen Lake services the eastern and central sections of the park.

The Jensen Lake use area, which is essentially fully developed, has two primary functions: group picnic facility and trailhead. Figure 5.21 provides an aerial overview of this area.

Figure 5.21 – Aerial of Jensen Lake use area.



The group picnic facility consists of a picnic shelter that accommodates between 150 and 200 people, an attached restroom that is open to the general public, a children's play area, and lake overlook. Two parking lots are also provided in this area. One is a small lot near the shelter with 14 spaces, many of which are handicap accessible. The second lot is much larger and provides 114 spaces. This lot supports the picnic facilities and the trailhead. The open picnic area across the street from the shelter is a very nice setting among mature oaks. Development here is limited to picnic tables, grills, and trash containers.

Aside from the existing facilities at Jensen Lake and Holland Lake, no other picnic shelters are planned for the park.

As a trailhead, Jensen Lake services the eastern and central sections of the park. This includes the trail loop around Jensen Lake, which is very popular. Since the trailhead is supported by the facilities listed above, there are few improvements needed to the trailhead itself aside from upgrades to signage and trail information.

Integrating the existing lake overlook into the loop trail around the lake may result in greater continuity in this trail.



Photo illustrates the natural vegetation surrounding the parking lot.



Holland Lake Use Area

The Holland Lake use area is essentially fully developed.

One of the trail design challenges associated with this use area is continuing the nature trail loop along the lakeshore, which is now somewhat interrupted by the steep slopes, limited space along the shore, and existing built structures associated with the picnic area. In spite of the limitations, maintaining the continuity of this trail is desirable to retain the nature trail context around the entire lake. One approach to this is reworking the trails in this area to include the lake overlook as part of the nature loop, rather than it being more closely associated with the picnic facilities.

The trail access (“portage”) to the canoe course and nature trail from the parking lot should also be maintained. Keeping this as simple and natural as possible (as defined later in this section under discussion of the canoe course) is desired. This is especially important in that it is the beginning of the course and hence sets the stage for the experience.

One final design issue within this use area relates to Carriage Hills Drive, which services the park and a number of in-holdings to the east of the small parking lot. Recognizing that acquisition of the properties along Carriage Hills Drive is on an uncertain timeframe, the master plan calls for redesigning this road to identify where the park road ends and the “private” road begins (note that the entire road falls within a public right-of-way). Although the property owners would benefit, the purpose of doing this is actually for park users. By alleviating some of the confusion as to where the road goes, park users would be less inclined to follow it to the very end, only to have to turn around. Also, downplaying the road also serves to downplay the fact that there are in-holdings remaining within the park. In the long-term, once the in-holdings have been purchased, the entire road from Pilot Knob Road in to the small parking lot adjacent to the picnic shelter could be redesigned to create more of an intimate and appealing park road, versus that of a residential street.

Although a fairly active area, one of the strong points of the Jensen Lake use area is the use of native plantings to the degree possible. This practice should be continued or even expanded here as part of the ecological stewardship program.

As with the Jensen Lake use area, the Holland Lake use area is essentially fully developed and has three primary functions: small group picnic facility, trailhead, and lake access for fishing and canoeing. Figure 5.22 provides an aerial view of this area.

The group picnic facility is much smaller than the one at Jensen Lake and accommodates about 50 people. The shelter has an attached restroom that is open to the general public. The structure was partially burnt in 2000 and is scheduled to be rebuilt 2001. Other facilities in this area include:

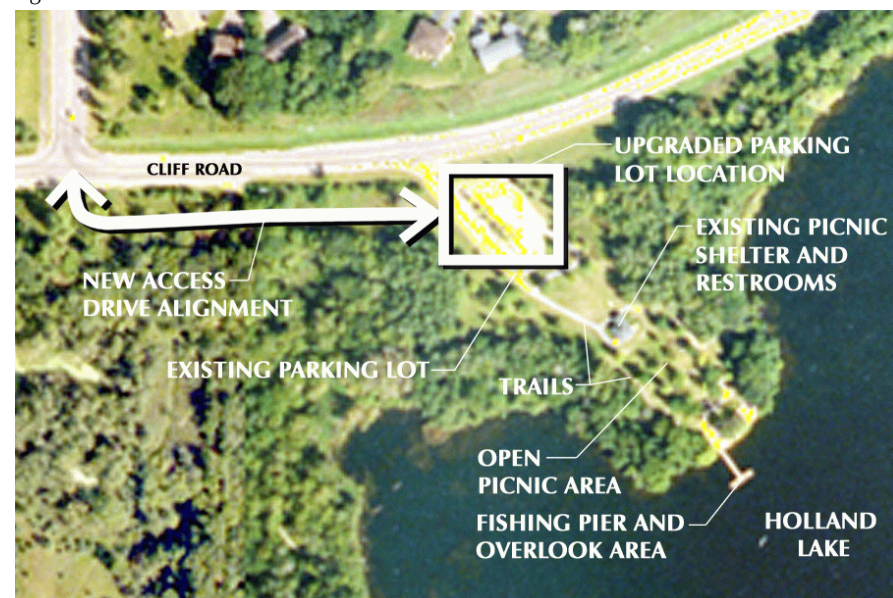
- ▶ An open picnic area with picnic tables, grills, and trash containers.
- ▶ Lake overlook and fishing pier.

The parking lot will be upgraded in 2001 and will provide approximately 65 spaces, which should be adequate for this use area and trailhead.

The burned out picnic shelter at Holland Lake will have to rebuilt.



Figure 22 – Aerial of Holland Lake use area.



The Holland Lake trailhead services parts of the eastern section of the park. Importantly, this trailhead takes considerable pressure off the Schulze Lake use area, which in turn reduces the parking requirements for that area. Given its ease of access, this trailhead has proven very popular with both summer and winter trails users. Since the trailhead is supported by the facilities listed above, few improvements are needed aside from upgrading signage, trail information, and trail connection points. A handicapped accessible trail from the parking lot to the lakeside amenities is also needed.

The old parking lot that will be upgraded in 2001.



The lake overlook and fishing pier have proven to be popular with visitors.



Campground Use Area

One of the more publicly-sensitive discussion points during the planning process was the campground use area.

Upon further evaluation, a new master plan emerged that better reflected the concerns of citizens while at the same time meeting the key facility needs of the park district.

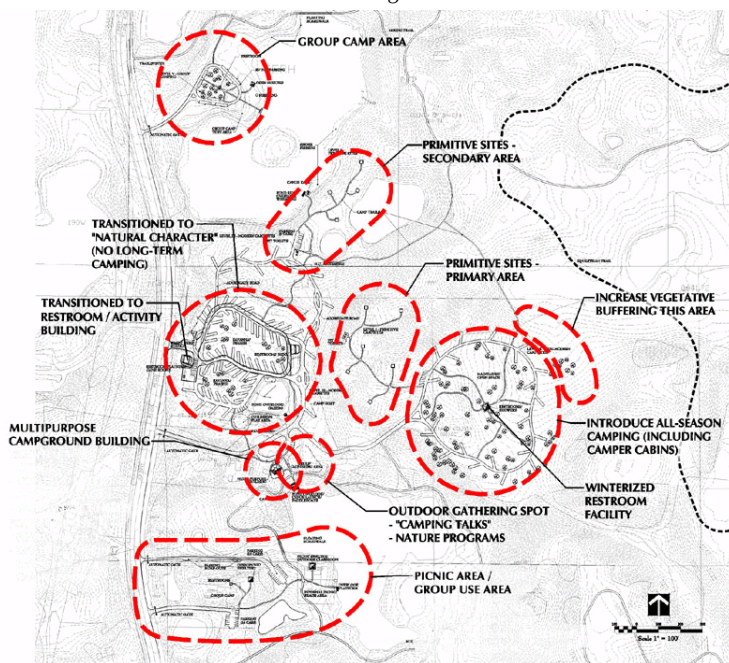
Photo illustrates the existing R.V. campground, which be transitioned from manicured turf to a more natural landscape that is keeping with the regional park setting.



One of the more publicly-sensitive discussion points during the planning process was the campground use area, which was expanded in the late 1990's to meet increased demand for camping facilities. Although significant portions of that expansion have been completed, a number of on-going issues remained that required attention in this master plan. Key issues related to the extent of future development that would occur in this area and concern about long-term camping (more than two weeks). Note that the first issue is considered here, while the latter is considered in Section VI.

With respect to future development, the master planning process provided the opportunity to reassess all aspects of the previous concept plan for this use area. After considerable public discussion, notable changes in the plan for this area occurred. The next two figures illustrate the concept plan previously defined and the master plan that emerged out of this planning process.

Figure 5.23 – Previous concept plan for campground use area, which has been scaled back as shown in the next figure.



As figure 5.23 illustrates, the previous concept plan called for additional expansion of the built footprint in this use area to accommodate various needs. Upon further evaluation, a master plan emerged that better reflects the concerns of citizens while at the same time meeting the key facility needs of the park system. Overall, the master plan considerably scales back and redefines the concept plan, as illustrated in figure 5.24 on the next page. The following provides an overview of the development program that emerged from the planning process.

Existing RV Campground Area

As illustrated in figure 5.24, the existing RV campground area will be transitioned from a manicured area with an urban character to one that is more natural and in keeping with the character of a regional park setting. This includes a reintroduction of native plant

communities (e.g., prairies and oak savanna systems) and a general softening of the manicured form in areas outside of campsites. Other changes to this area include:

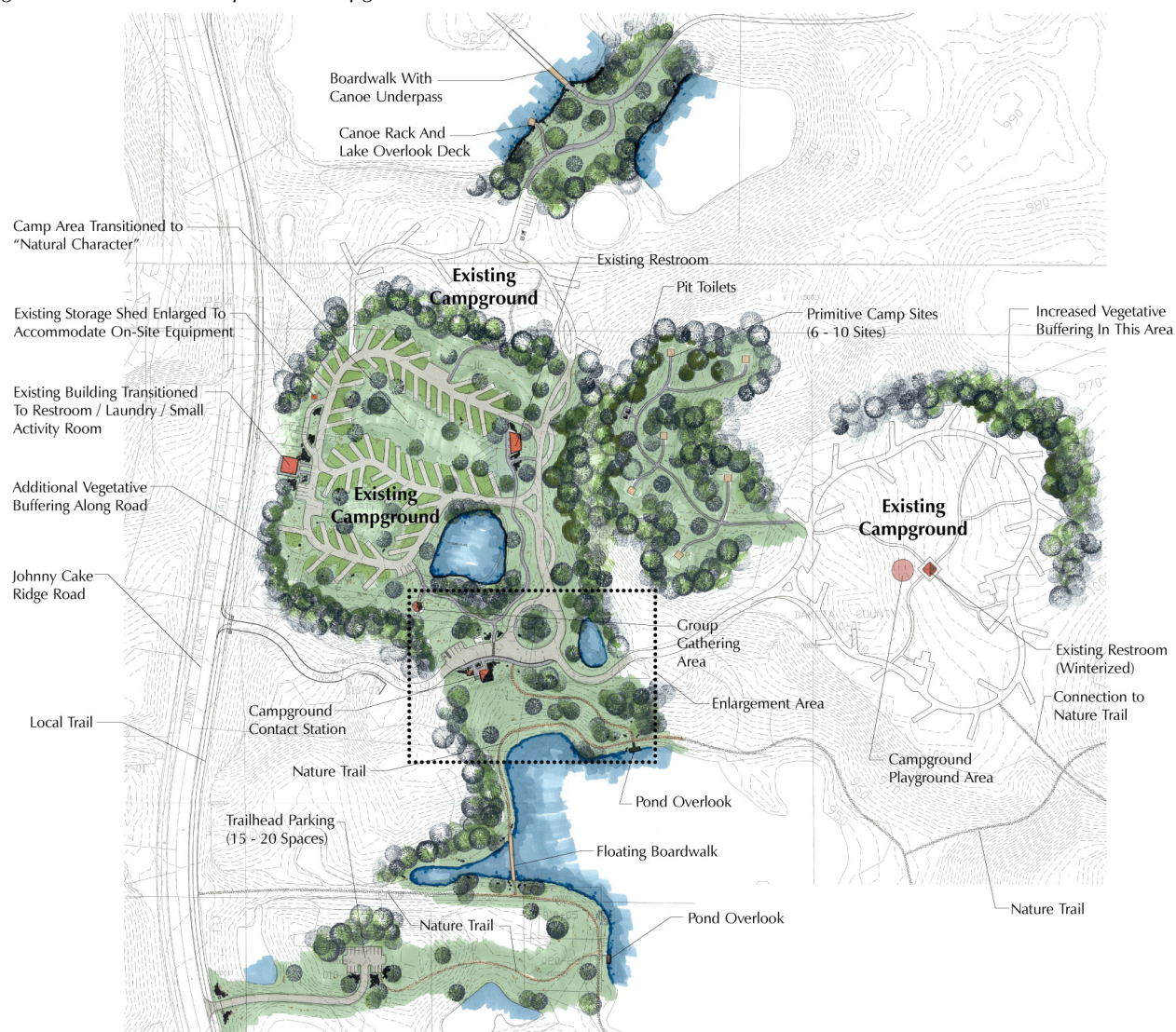
- ▶ Transitioning office space in the existing contact station into a small activity area for day use by campers.
- ▶ Adding buffering and screening between Johnny Cake Ridge Road and the campground.
- ▶ Enlarging the existing storage shed to accommodate on-site equipment (garage size structure.)

Photos illustrate the character of the east camp loop. Note the attention given to blending the road and sites into the natural landscape.



The combination of the existing western and eastern camp loops, along with the proposed primitive sites, will provide a wide diversity of camping experience within the campground.

Figure 5.24 – New master plan for campground use area.



The master plan includes the development of a contact station adjacent to the new entrance road.

The outdoor gathering area shown in the illustration provides a space for outdoor education programs (i.e., “ranger talks”) and group activities.

Campground Contact Station and Outdoor Gathering Area

As illustrated in figure 5.25, the campground master plan includes the development of a contact station adjacent to the new entrance road. Although this design feature was retained from the previous master plan, it was scaled back considerably to only provide essential support facilities, including:

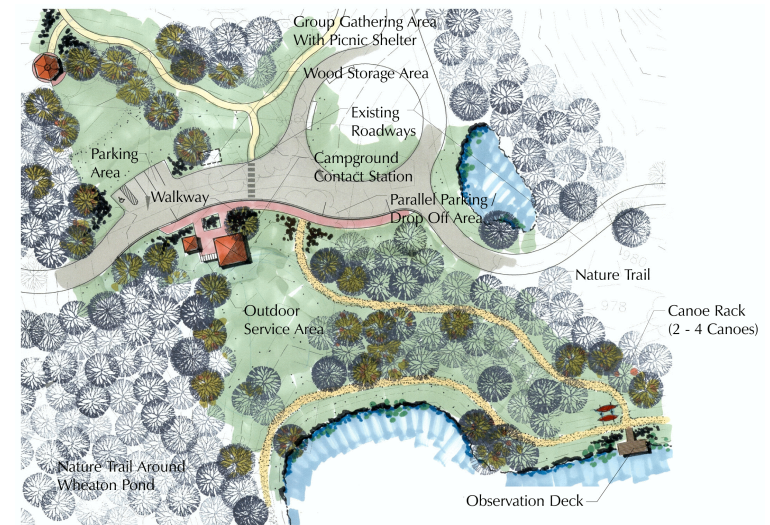
- ▶ Registration office/information center.
- ▶ Small retail area for basic camper needs.
- ▶ Restrooms.
- ▶ Mechanical room and storage space.
- ▶ Service area for telephones, ice, pop machine, etc.
- ▶ Firewood enclosure.
- ▶ Information kiosk.

The outdoor gathering area shown in the illustration provides a space for outdoor education programs (e.g., “ranger talks”) and group activities. Development features are limited and include a small open shelter with a roof for inclement weather, a grass seating area where portable benches and lawn chairs can be positioned, a platform of some sort for speakers, and perhaps a fire ring. Although figure 5.25 indicates a specific location for this area, in reality its final location will be determined when it is actually developed. Greater scrutiny of sites within the campground area is recommended to ensure that the siting of the outdoor gathering area fulfills program needs without disrupting other activities. In addition, ease of trail access to the gathering area from the environmental school across Johnny Cake Ridge Road should be considered in the final design for this area. Doing so will help avoid having student groups walking along the road or through campsites to get to the gathering area.

Primitive Camp Sites

As illustrated in figure 5.24, the master plan includes six to ten primitive camp sites that would be nestled in the woods between the two existing camping areas. With the addition of these sites, the campsites will be complete. A side note here is that the primitive sites planned for location adjacent to Gerhard Lake have been eliminated to minimize the footprint of the campground and make way for a trail connection from the campground to the connector trail. Although this results in a net reduction of primitive sites, this approach was considered a reasonable balance between meeting programmatic needs while at the same time responding to public concern about loss of open space.

Figure 5.25 – Past master plan for campground use area.



A few other features of the campground area master plan are worth noting.

From a design standpoint, the primitive sites would be quite simple and consist of a small clearing for a tent, tarp setup, fire ring, and picnic table. The path into each site would be typically four to six feet wide and would be surfaced with a stabilized fine aggregate to ensure accessibility. Water would be provided near the parking lot that services the sites or brought in underground to a hose bid that would be located near the pit toilets. Since a parking lot already exists at the entrance to the primitive sites, no additional parking lots are anticipated.

Additional Master Plan Features of the Campground Area

In addition to the above, a few other features of the campground area master plan are worth noting. The first relates to improving the screening between the developed upper, or east, campground loop and the large open meadow area to the east. As shown in figure 5.25, increasing the vegetative buffering between the campground and open meadow was thought to be needed to create a greater sense of separation between the two. This is important in that a couple of nature trails traverse through the meadow area and the idea is to protect the trail users' experience by blocking their view of the campsites to the degree possible. Note also that there are two or so campsites in particular need to be reviewed to ensure that they will be effectively screened to achieve the objectives as set forth. If they cannot, consideration needs to be given to realigning or removing them.

Another feature of the campground area includes development of a modestly sized playground for young children within the eastern camp primarily for those using the campground. It will be located near the restroom building. The design intent is to provide play structures appropriate for the setting.

Other site features include pond overlooks on Wheaton Pond and Gerhardt Lake. This amounts to a small platform area that provides simple access to the water's edge for either fishing, launching a canoe, or sitting. Providing a small canoe rack at each of these overlooks is also in the development program to allow campers (and others) an opportunity to get out onto the water for a short paddle.

In addition to the above features, the idea of constructing several camper cabins was considered during the design process. After much debate, it was determined that the more optimal location for cabins would be at Camp Sacajawea.

The use of the campground for trailhead parking was also considered. While this has some merit for winter uses (as defined later in this section), summer use of the campground for this purpose was found to be too disruptive to the use and operation of the facility. (The Wheaton trailhead was created to address this issue.)

Photo illustrates the existing winterized restroom building in the east camp loop.



Camp Sacajawea Use Area

Philosophically, the vision for this use area is a comprehensive outdoor and environmental education-based immersion experience in a secure setting.

Winter Use of the Campground

One of the emerging trends related to the campground relates to an increase in the desire for winter camping. Although such camping may have a relatively small number of participants relative to other activities, this use can be accommodated with relative ease since the restroom building completed in 1999 is winterized. Although camper cabins will not be provided, the campground's design could readily handle winterized campers or R.V.s, tents, heated wall tents, and even yurts that can accommodate a few people to a small group. In each of these instances, the only requirement is plowing the roads and trails through selected loops, providing water at the restroom, and keeping the restroom building open.

In addition to winter camping, using the campground as a trailhead for ski trails is defined as an acceptable winter use. Under this scenario, the roads, parking lots, and select camp sites would be plowed and used for informal parking. Trail connections from the campground to the ski trails would also be provided. In addition, the restrooms provided in the eastern camp loop or those that would be available at the contact station could be open for skiers and snowshoers to use. Providing a lockable storage area for the ski patrol also has merit.

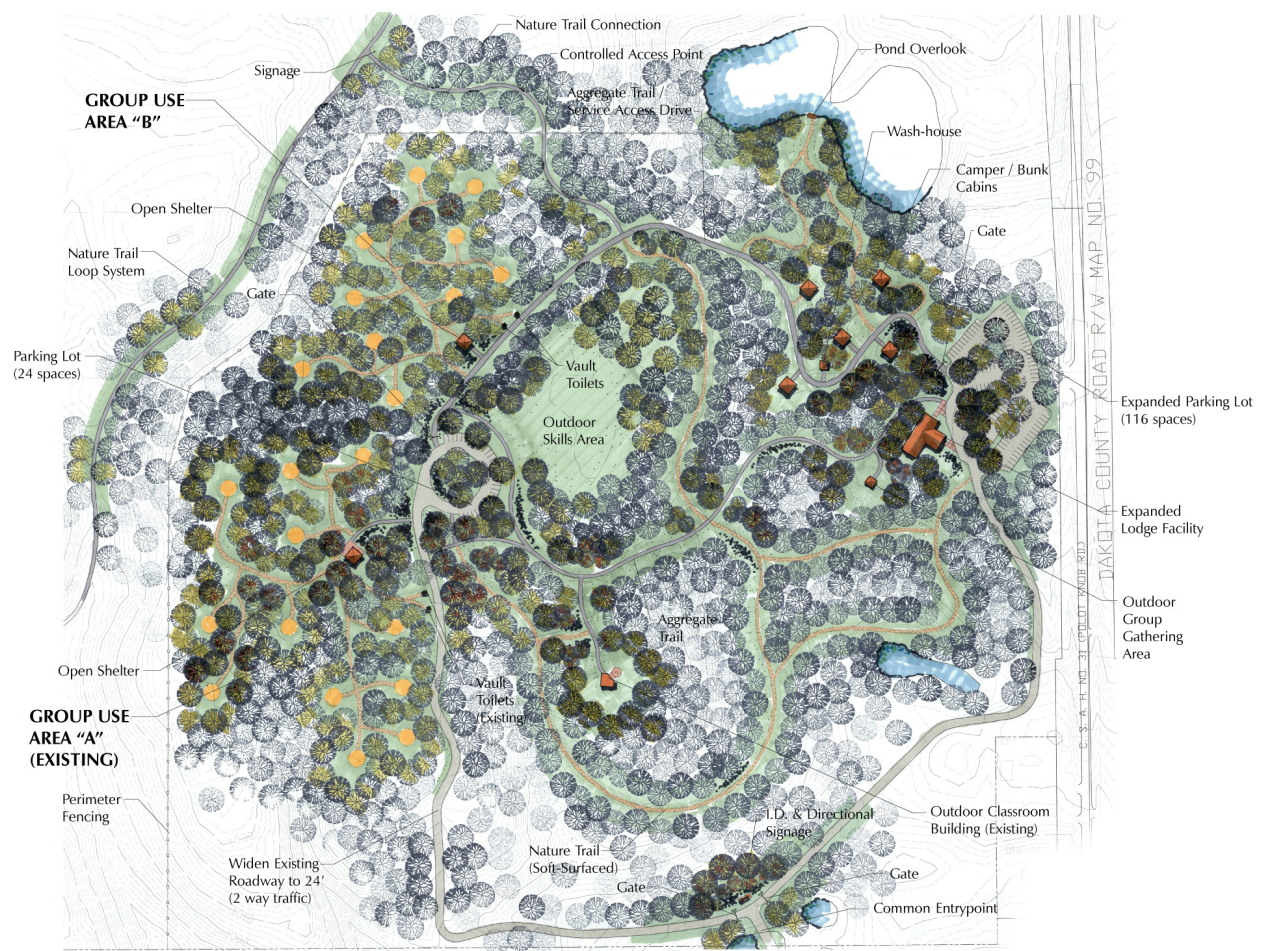
Camp Sacajawea is a unique use area that has historically focused on providing facilities that support youth group activities. For example, Scouts, 4-H, campfire, church, and school groups have used the site for many years. Camp Sacajawea has had marked success as a special use area that brings youth into the outdoor setting to build outdoor, social, interpersonal, and intellectual skills. Expanding program opportunities for youth along with other user groups is the essence of the master plan for Camp Sacajawea.

Philosophically, the vision for this use area is a comprehensive outdoor and environmental education-based immersion experience in a secure setting. From a long-term development standpoint, the objective for Camp Sacajawea is to provide facilities that offer a high degree of flexibility to accommodate various users and programs with an environmental, cultural, historical, and natural resource focus. Although continuing to serve youth groups will remain a primary focus, other user groups (e.g., seniors, non-profits, and corporate) are also expected to be served in the future, particularly during non-peak times. Essential in providing expanded opportunities will be ensuring the compatibility of uses and user groups. The concept plan for this use area will be underscored by a number of principles:

- ▶ Maintaining a controlled setting that instills confidence in program leaders and participants that the site is secure and free from outside influences and distractions.
- ▶ Building in flexibility to all facilities to broaden their use potential and capacity to accommodate groups of varying size and makeup in an efficient and effective manner.
- ▶ Allowing for stays ranging from a half-day to a full week.
- ▶ Encouraging year-round use to maximize investment.

Figure 5.26 on the next page illustrates a conceptual master plan for Camp Sacajawea. Note that the intent of the plan is to illustrate the potential of this use area to service existing and future programmatic needs and various user groups while maintaining its sense of place, scale, natural qualities, and level of security.

Figure 5.26 – Conceptual plan for Camp Sacajawea Use Area.



The following considers each of the major use areas and facilities illustrated in the last figure.

Interrelationship Between Use Areas

The interrelationship between uses and facilities within the Camp Sacajawea area is quite important.

As part of the flexible use approach, the interrelationship between uses and facilities within the Camp Sacajawea area is quite important. As illustrated by the concept plan, the intent is to design the area so that each of the major features can be used independently or in combination with each other to service a given need. Although the concept plan preliminarily illustrates a design, other arrangements will need to be considered as the plan is implemented.

The group use area is very popular and secure. As with the rest of the park, ecological stewardship is a high priority.



The development program envisioned for the lodge revolves around expanding it to accommodate 100 or so people.

The lodge is a popular and successful facility that may warrant expansion.



Group Use Areas

As illustrated, the conceptual plan identifies two group use areas. Group use area “A” is an existing group use area that has been in service for many years. Area “B” lies to the north and would be created as program demand warrants in future years. Programmatically, each of these areas will be designed to accommodate a variety of groups for day-camp type activities or up to week-long camp-outs. The development program envisioned for each of these group use areas includes:

- ▶ Ten to twelve open camp sites per area for groups to set up tents or rain tarps.
- ▶ An open shelter with group cooking area and access to drinking water.
- ▶ Vault toilets.
- ▶ Accessible access trails to campsites and other facilities (nature trail character).
- ▶ Information kiosks.

An access road and a small parking lot would also be provided adjacent to these use area, as would trail connections to the lodge and outdoor classroom. In all cases, any built facility would be natural in character and of a sustainable architectural design.

Lodge Facility and Camper Cabins

The existing lodge, which has a capacity of approximately 50 people, consists of an open meeting room, kitchen area, restrooms, small storage space, and mechanical room. The main meeting room has been upgraded in recent years and has a natural appeal that is very appropriate for the setting. Although the lodge has been successful in meeting the basic programmatic needs of the youth groups that use the site, it does not function as well as it could due to the inadequate storage space, entry and kitchen area.

The development program envisioned for the lodge revolves around expanding it to accommodate 100 or so people and improving the functionality of the facility. Architectural elements envisioned include a multipurpose space (that can be broken down into small rooms for multiple groups), improved kitchen facilities, adequate storage and mechanical space, redesigned entry, and other features that would emerge as the architectural program is developed at the point of implementation. To support the redevelopment of the lodge, the parking area would require some expansion, as shown in figure 5.26. The existing drop off area and circulation pattern each need closer evaluation and possible reconfiguration as well.

With respect to the camper cabins, the conceptual plan shows five cabins that could each accommodate about eight people. The cabins themselves would be very simple and likely consist of four bunk beds, a stove, and table with chairs. Restrooms, showers, and access to drinking water would be provided in a nearby wash-house. From a siting perspective, the cabins are located to be separate, stand-alone facilities. However, since they also would support programs and activities associated with the lodge, the cabins would have to be in reasonable proximity to it, as shown in figure 5.26. Accessibility of the cabins will also be important to service all user groups and levels of ability. As with other buildings in the park, a sustainable architecture approach is appropriate and desired.

The outdoor skills area refers to outdoor facilities that are used to support programs that help develop participant’s aptitudes in a variety of outdoor activities and skills.

The existing outdoor classroom will remain in its current location.

Additional Conceptual Master Plan Features of Camp Sacajawea Use Area

In addition to the above, a number of other features within this use area were identified. The outdoor skills area refers to outdoor facilities that are used to support programs that help develop participant’s aptitudes in a variety of outdoor activities and skills. Although these facilities will ultimately be designed and developed to support specific programs, potential activity spaces range from an open play field and games area to a high and low ropes course, climbing wall, etc. Along with the practical layout of these features, paying attention to blending them into the natural surroundings to maintain the character of the area will be an important design consideration.

The existing outdoor classroom, which has proven to be a valuable amenity, will remain in its current location. The internal trail system needs to be expanded to provide the necessary interconnections between old and new facilities. Additional nature trails for hiking, nature study, and snowshoeing were also cited as being needed by program providers, as is a connection to the larger trail system. Perimeter fencing around the camp has proven to help maintain a sense of security and should be retained – although its location and style may change. A gate to control access from the larger park into the Camp Sacajawea area is also shown on the concept plan in figure 5.26 and should be provided to maintain a high sense of security.

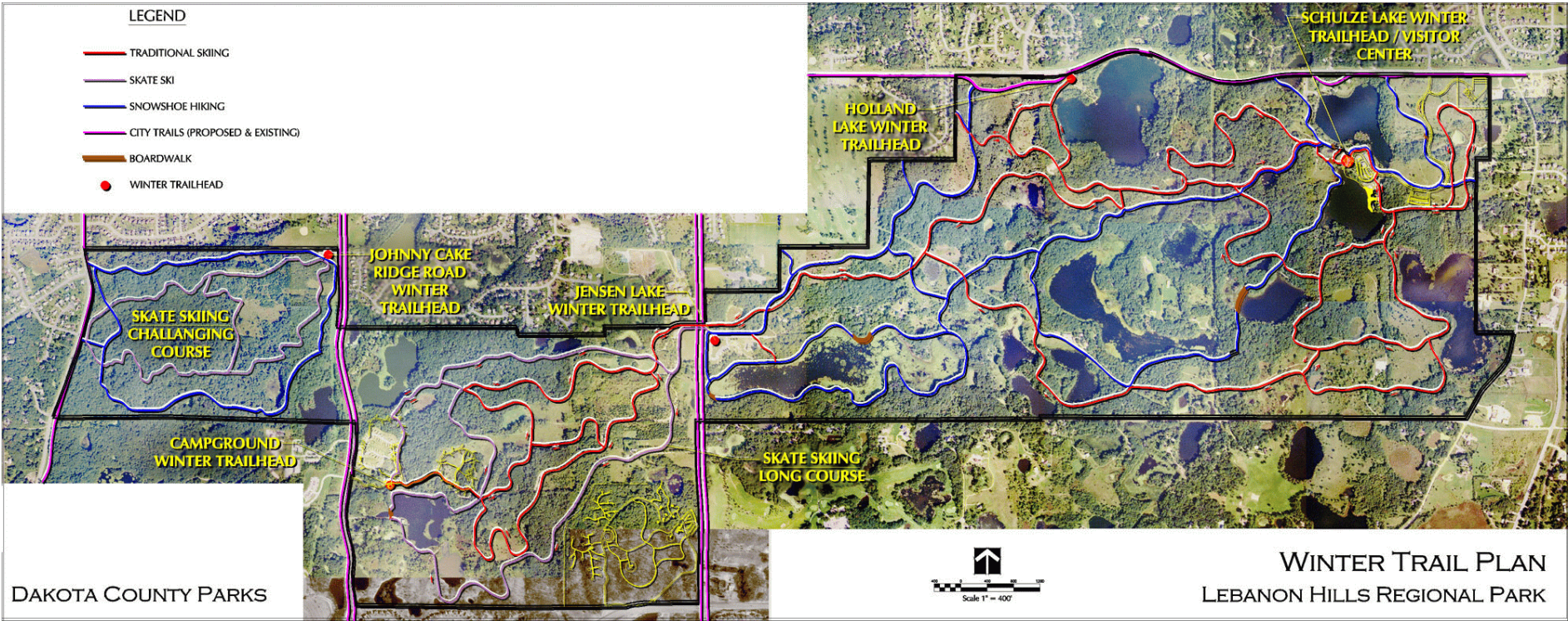
The conceptual master plan also takes a creative approach to the existing looped drive through this use area. Although other options warrant consideration, the plan as shown illustrates that redesigning the roadway can serve to more clearly define and clarify vehicle access points to the different use areas. It also illustrates that a portion of the hard surfacing within this area could be eliminated without compromising serviceability.

Internal Trail System – Winter Use

As with the summer trails, the winter trails within the park have been and will continue to be a key part of the development program. By and large, the winter trails will simply follow the established summer trail corridors as previously defined. As shown in figure 5.27, four primary types of winter trail uses are provided for under the master plan. Trail types, along with their estimated mileage, are defined in the following table.

Trail Type	Estimated Existing Mileage	Proposed Mileage Under Master Plan
Classic Ski Trails	11.5 miles	12.6 miles
Skate Ski Trails	2.5 miles	6.2 miles
Hiking Trails	8.1 miles	10.1 miles
Snowshoeing Trails	unlimited off trail	unlimited off trail

Figure 5.27 – Winter trails plan.



Trail Alignments and Mileage

Since the winter trails are essentially laid over the summer trails, a great deal of flexibility exists to adjust the routing of specific trail types in response to changing or emerging needs

As a working model, the objective of the master plan is provide a system of trails for winter use that respond to the demands and recreational trends in any given year. Since the winter trails are essentially laid over the summer trails, a great deal of flexibility exists to adjust the routing of specific trail types in response to changing or emerging needs. The trail layout shown in figure 5.27 represents a winter trail routing plan that is based on perceived needs as defined by the user groups and Dakota County Parks Department staff. Note that the layout provides the broad picture for trail alignments and will inherently require refinement as Dakota County Parks Department staff and the user groups review specific alignments and skiing directions in the field prior to each season. The following considers each trail use in greater detail.

Classic Skiing: This style skiing remains the backbone of the winter trail system and the most overall mileage is provided for these trails. Trail loops are concentrated in the eastern and middle section of the park and for the most part follow routes that have proven successful and fun over the years. Of significance under this master plan is adding a loop on the south side of the eastern section, which adds both distance and diversity to these trails.

Skate Skiing: Under the routing plan as proposed, skate skiing opportunities will be significantly expanded through the creation of a new loop in the middle section of the park. Under this scenario, the existing loop in the western section of the park will remain and be defined as the challenge course, given the character of the trails in that area. The new trail in the middle section will be defined as a fitness loop due to its length and the less challenging nature of the trail. Note that this last statement is relative to Lebanon Hills, which by its very nature offers a more challenging skiing terrain than many other regional parks of similar size.

Hiking Trails: As shown in figure 5.27, winter hiking trails will be fairly extensive in response to greater interest in this activity. While hiking trails will be retained in popular areas (i.e., Jensen Lake and the western section of the park), new ones will also be opened up to create a generally more extensive network of trails for this purpose.

Snowshoeing Trails: In line with past practice, designated snowshoeing trails are not defined on the trails map at this time. Instead, off-trail or cross-country snowshoeing is allowed in response to the nature of this activity. Also, the overall demand does not suggest that designating trails for snowshoeing is required at this time. Note, however, that if the popularity of this sport continues to increase, defining routes within the park may become more of a necessity. Also, keeping people from getting “turned around” may also warrant some form of trail designation in the future. One interesting concept is to use small markers affixed to trees (non-permanent) to define a route for snowshoers to follow. The advantage of this marking approach is that the route can be changed to add interest and minimize impact as the season progresses.

Other Winter Trails Uses: In addition to the above uses, a variety of other winter trail uses must be considered, including dogsledding, skijoring (skier pulled by a dog), and winter horseback riding. Although the demand for these activities may never reach a threshold where a designated trail is warranted, providing opportunities within the park through approaches like “time-slotting” and special events may have merit and should be considered by Dakota County as it works with advocates for these sports. Time slotting refers to providing designated times for an activity to take place on a trail that is typically used for other purposes.

Support Facilities for Winter Trails

Support facilities for the winter trails will be those used for summer trails. In general, parking for the ski trails will be at the trailheads as previously defined. The exception to this is the campground use area, where there is the potential to use the roads, small parking lots, and campsites for trailhead parking and access to the ski trails in the middle section of the park. A key advantage of this approach is that the restrooms that are provided in the east loop or those at the contact station would be available for winter use. Dakota County will have to work with the volunteer ski patrol to determine when trail use warrants opening up this trailhead for use.

Support facilities for the winter trails will be those used for summer trails.

Another important aspect of supporting the winter trails is providing a meeting space and storage area for volunteer groups like the ski patrol.

The primary concern is that lighting would take away from the park setting.

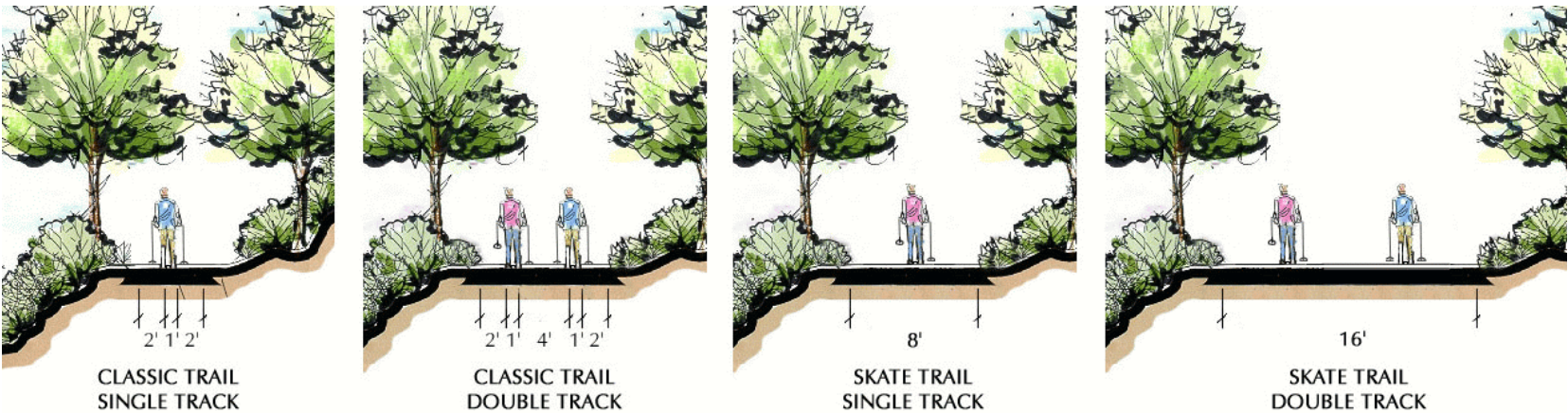
Another important aspect of supporting the winter trails is providing a meeting space and storage area for volunteer groups like the ski patrol. Space for meetings, training, and ski programs is much needed if this group is to continue to be effective in providing services that cannot be provided by staff. As a growing volunteer group, the ski patrol is a perfect example of people that are ambitious and well organized, but lack the essentials for them to be most effective. The Visitor Center and the campground contact station are of particular importance in providing the facilities needed to support this group’s activities – as well as those of other groups.

There was also public discussion about providing lighted ski trails. Whereas these have proven popular at some regional parks in the metropolitan area, general public consensus at this time was not to take that step for Lebanon Hills. The primary concern is that lighting would take away from the park setting. An alternative to lighted trails that was found to be appropriate was doing a “candlelight ski” special event a few times each season. This approach could prove to be popular and yet not require any permanent changes to the park.

Trail Grooming Standards

Trail grooming standards for the ski trails are important in the context of the master plan because they define the “clear zones” needed to groom the trails to safe and practical widths . Figure 5.28 illustrates the trail widths needed for the most common ski trails found within the park.

Figure 5.28 – Ski trail typical width standards for classic and skate skiing styles.



Important to the discussion about trail width is

Important to the discussion about trail width is recognizing that the summer use trails that are used for winter ski trails will have to be designed with the “clear zone” in mind. The challenge here is doing so in a fashion that does

recognizing that the summer use trails that are used for winter ski trails will have to be designed with the “clear zone” in mind.

not detract from the experience of the summer trail. Realistically, the design for both the summer and winter trails will require a degree of flexibility to meet the needs of both seasons. With respect to winter trails, there will be occasions where a single track classic trail may be used in areas where the summer trail is too narrow to do otherwise. If done well, this can actually add interest, versus being detrimental, to the skiing experience.

Another very important trail grooming consideration is the practical nature of grooming equipment. Although much care is given by Dakota County in selecting equipment for this purpose, industry standards often limit options. As such, ski trail widths of less than ten feet will be difficult to come by with most newer equipment. Although this can be overcome to some degree by using a snowmobile with a grooming attachment, from a practical standpoint this approach will be the exception rather than the rule. It would be too inefficient and result in lower trail grooming quality to do the whole trail system in this manner.

Canoe Course

Maintaining a rustic and simple approach to the canoe course is the only route to follow.

The canoe course is a rather unique component of the master plan. It is unique in that very few regional parks offer the size and natural characteristics necessary to link together a series of lakes and ponds into a cohesive, interesting, and even challenging canoe course. It is also telling that the canoe course underscores the very qualities that people are passionate about: a pristine natural area that allows one to get away from the developed urban form. With this as a backdrop, it becomes evident that maintaining a rustic and simple approach to the canoe course is the only route to follow.

As illustrated in figure 5.30 on the next page, the canoe course links a series of lakes, ponds, and portages to create a complete water trail. In addition, several stand alone lakes provide canoeing opportunities that are readily accessible from various trailheads.

The simpler the better is the theme for the canoe course.



From a design standpoint, a rustic and minimalist approach is proposed. This means keeping lake access, portage trails, and signage as simple and unobtrusive as possible to avoid detracting from the experience. Figure 5.29 provides a character sketch of what a canoe landing may entail.

One important qualifier to the design approach for the canoe course is concern about accessibility. Whereas significant built structures are not envisioned, simple design features, like the well-placed flat rock as shown in the illustration, can improve accessibility. Involving user group representatives and organizations like Wilderness Inquiry, Inc. – a non-profit group committed to getting people of all abilities into the wilderness – in the actual design of these features is recommended to take advantage of expertise gained from many years of practical experience.

Figure 5.29 – Character sketch of a natural canoe landing that is enhanced to make it more accessible.

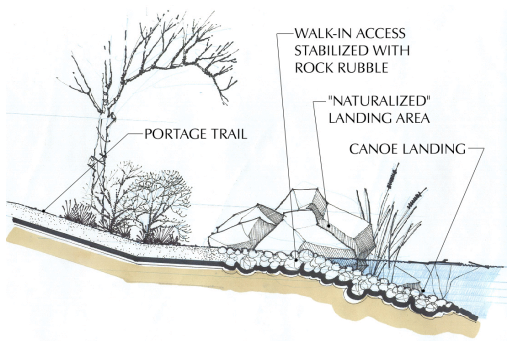
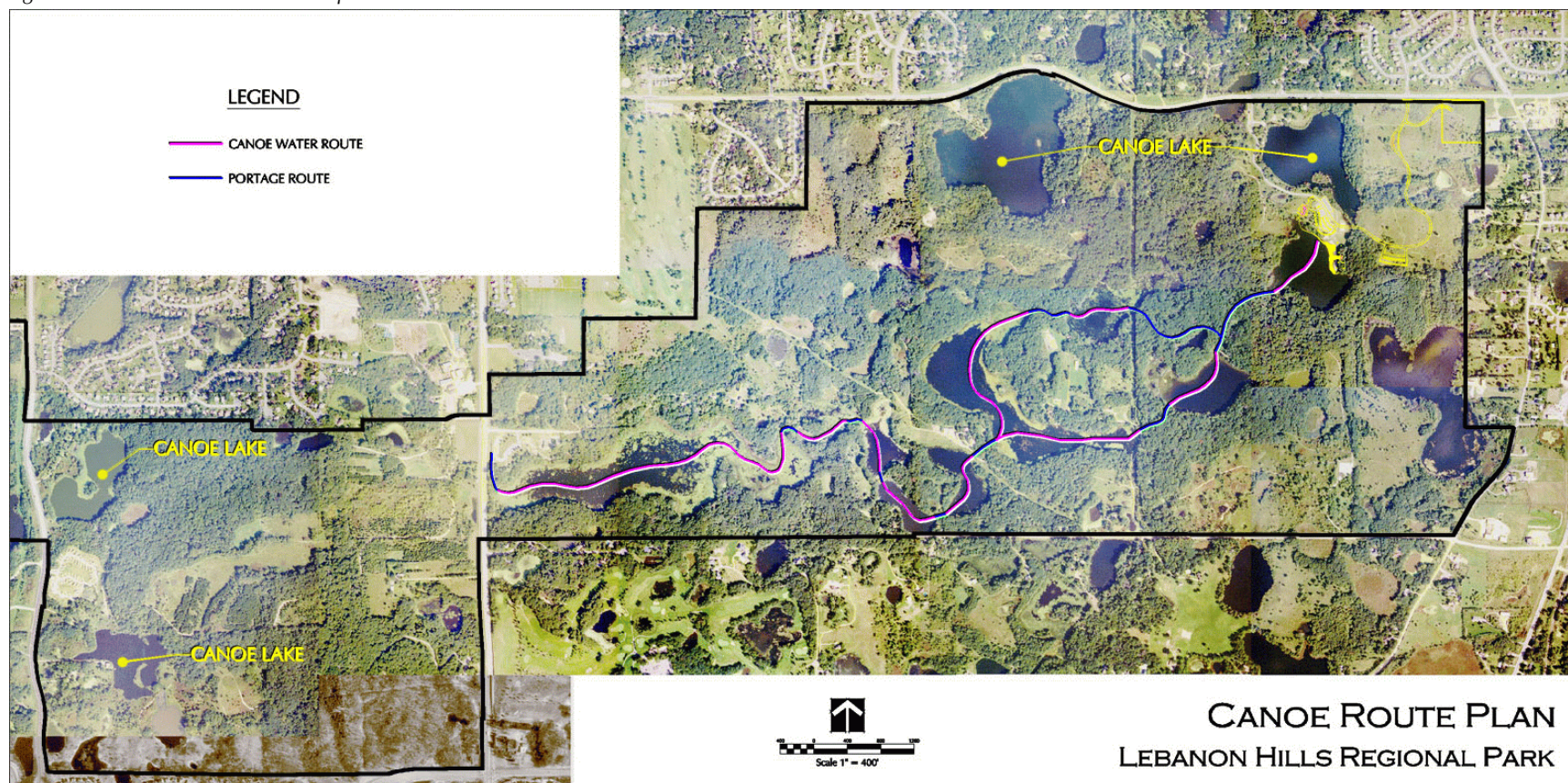


Figure 5.30 – Canoes course master plan.



From a programming standpoint, the canoe course will be used to support Dakota County's Outdoor Education Program. Use of the course for programs ranging from wildlife study and biology to wilderness canoeing skills development is envisioned and soundly supported by canoeing advocates.

Maintenance Facility

The master plans calls for the relocation of the maintenance facility.

The master plan calls for the relocation of the maintenance facility for several reasons:

- ▶ It is located in a prime ecological area that has greater value as a natural open space and for nature trails.
- ▶ The existing site is limited in size to meet future needs.
- ▶ The existing site is an inefficient location for maintenance operations.
- ▶ The facility is aesthetically incongruent with the natural character of the park in this important ecological area.

The following considers these and other issues in greater detail.

The functional capacity, aesthetic qualities, and location of the existing maintenance facility are all factors behind the need to redevelop this facility elsewhere in the park.



Originally, the site was a farmstead with outbuildings that were converted to maintenance functions starting in the late 70's.

Existing Functions and Issues

The existing maintenance facility at Lebanon Hills Regional Park serves as the base for maintenance operations and storage for Lebanon Hills, as well as Big Rivers Regional Trail (BRRT) and Thompson County Park. Additionally, the facility provides some minimal support for patrol operations in the park, including e-mail, fax, phone, restrooms, and office space.

Major components of the base include:

- ▶ Heated shop building (1) – 5,360 square feet.
 - S Building #1: office, restroom, lunchroom, work bays, equipment bays, storage, etc.
- ▶ Cold storage buildings (2 primary one, 4 smaller) – 7,588 square feet.
 - Building #2 (40x40+40x30): loader, log truck, other larger equipment
 - Building #3 (60x64): truck storage
 - Building #4 (16x22): tractor shed
 - Building #5 (14x22): storage (old chicken coop)
 - Building #6 (12x14): paper supply storage
 - Building #7 (10x12): salt storage shed
- ▶ Yard space – 155,725 square feet.
 - For circulation, employee parking, outdoor storage of bulk items, etc.
 - Other: fuel pumps, loading dock (square footage included in above)

Originally, the site was a farmstead with outbuildings that were converted to maintenance functions starting in the late 70's. Buildings and additions were added incrementally when need and funding allowed. The resulting three major buildings and four smaller ones are the product of this incremental approach.

Major issues associated with the existing facilities include:

- ▶ Inadequate building space, both heated and cold storage. The buildings are at capacity and there is no space available for additional maintenance, patrol or storage needs of vehicles and equipment.
- ▶ Lack of reasonable expansion opportunity, especially when the negative environmental, aesthetic, park use impacts are factored in.
- ▶ Inefficient location of this isolated site creates a situation where much of the park is very inconvenient to service – which unfortunately promotes vehicle use of the trails as shortcuts.
- ▶ Indoor maintenance activities are not always compatible with each other and cannot currently be separated. Examples include: winter woodworking, which generates dust and noise; simultaneous painting activities, which can be odorous; washing station not separated from these other activities, so overspray onto other projects happens; welding and ventilation inadequacies; and so forth.
- ▶ Yard space inefficiencies due to the incremental approach, along with constraining site characteristics (wetlands, topography, trees, etc.) has produced a configuration that is congested, inefficient, and unsightly.

The biggest issue is that the facility is located in a very important ecological area that is best used for open space and trail purposes.

Redevelopment Needs and Issues

From an overall park perspective, the biggest issue is that the facility is located in a very important ecological area that is best used for open space and trail purposes. Coupled with the limitations defined above, relocation of the facility has justification.

With respect to the facility itself, the current issues will undoubtedly be exacerbated in the future due to increased new demands. This base will need to serve the expanding maintenance, patrol, and program needs at Lebanon Hills. It will also serve the expanding needs of BRRRT (½ mile additional trail in 2001) and Thompson County Park (with Pavilion/Senior Center 2001). Additionally, it will serve the North Urban Regional Trail (NURT) which is scheduled for advanced planning work in 2001 (construction starting perhaps in 2002) and likely a portion of the planned Mississippi River Regional Trail (MRRT). Given these demands, increasing the functional capacity of this facility will be a necessity. Although the program has yet to be fully refined, anticipated future needs (10 years) include:

- ▶ Heated shop building – 12,000 square feet
 - Equipment storage and repair bays; paint, chemical, welding, woodworking, wash bay areas; storage; office; restrooms; and lunchroom.
- ▶ Cold storage building – 12,000 square feet
 - For existing equipment and storage needs, plus 2 patrol vehicles, program related items (canoes, kayaks, adventure learning gear, etc.)
 - New tractor, blower, vac rig, and allowance for modest other expansion.
- ▶ Yard space – 217,800 square feet
 - For circulation, employee parking, outdoor storage of bulk items, etc. (to be fenced in and secure).
 - Other items: fuel pumps, loading dock (square footage included in above).

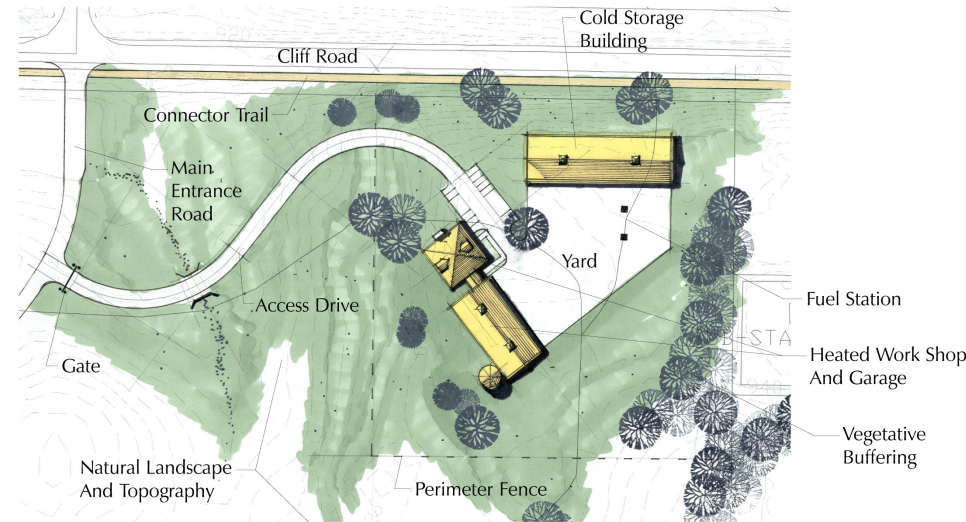
Other facility considerations relate to siting and architecture. The siting of the facility needs to provide:

- ▶ Convenient and efficient access to the park and to roads used to access the park.
- ▶ Little interference with/to other uses within the park.
- ▶ Acceptable ecological impact (including storm water runoff control).
- ▶ Sufficient security (controlled entry, surveillance, etc.).
- ▶ Room for expansion.

Figure 5.31 on the next page provides a conceptual plan for the maintenance facility in a location on the very northeast corner of the park. This location was highlighted because it meets the criteria listed above. Note, however, that the final location for this facility will require additional evaluation at the time of implementation to ensure that it meets the siting criteria while not unduly taking away from the aesthetics of the park and the sense of entrance to the Schulze Lake use area. Should the location change appreciably from that shown in Figure 5.31, additional public input would be sought to determine where the facility would be best sited to minimize disruption to recreational activities and avoid undue impacts to the ecological and aesthetic qualities of the park.

Architecturally, the design for the buildings becomes important given the facility's "front door" location.

Figure 5.31 – Conceptual master plan of maintenance facility located off Cliff Road in the northeast corner of the park.



At the location as shown in Figure 5.31, the architectural design for the buildings becomes important given the facility's "front door" location. Instead of the standard metal-sided structure, more thought needs to be given to other materials that offer aesthetic and other architectural benefits. Although cost of construction remains a concern, the aesthetic qualities of any structure set in a natural park also are worthy of due consideration.

Park and Trail Signage Program

One of the more important communications tools is a comprehensive signage program that is carried uniformly throughout the park.

One of the more important communications tools is a comprehensive signage program that is carried uniformly throughout the park. The signage should provide a consistent message to park and trail users and provide information related to facility locations, trail routes, park rules and regulations, and other pertinent information. In addition, the park signage should be used to educate park visitors about the ecological stewardship program and provide interpretive information along the trails.

The signage program is of particular value with respect to the ecological stewardship program, where providing interpretive information to park and trail users at the point of contact has proven to be one of the most effective forms of education. The main benefit is that the park user can apply new knowledge immediately and begin to internalize its significance based on first hand experience.

Key Components of a Comprehensive Signage Program

The park signage program consists of a hierarchy of signs that give the park visitor needed information in an unobtrusive manner. From a design standpoint, a strong overall theme that is consistent with the natural qualities of the park is important. As with the buildings, signage should be considered an architectural statement that reflects the qualities of the park.

The entire park signage program is in need of redesign and upgrading. As shown in these photos, the existing program needs rejuvenation.

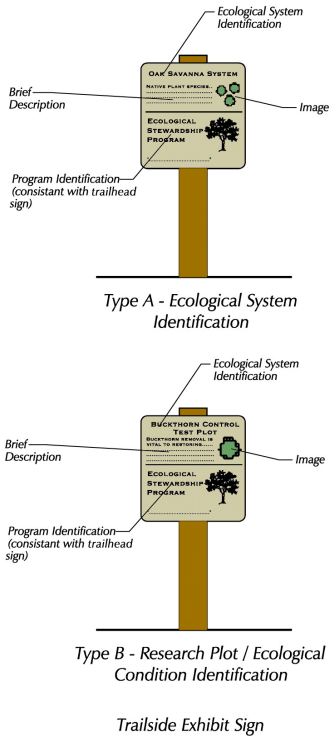


Key components of the signage program include:

- ▶ Park identification signs – located at all trailheads and main points of entry. These signs set the design theme for the entire signage program.
- ▶ Park directional signage – located along the roadways and provides basic directional information.
- ▶ Main information signs/kiosks – located at trailheads and major use areas. These signs provide a park map, general information and rules, and an overview of the ecological stewardship program.
- ▶ Trailhead sign – located at the start of a trail and provides a trail map and ecological stewardship program overview.
- ▶ Trailside exhibit sign – located along nature trails and provides information on ecological restoration and management activities and plant identifications.
- ▶ Trail intersection sign – located at trail intersections and provides a map of the trail system and “you are here” designation.

Although many of these components are commonplace, giving greater attention to ecological stewardship as part of the signage program is justifiable to raise visitor’s consciousness about this important issue. The next two figures provide examples of how this may be incorporated.

Figure 5.32 – Example of ecological stewardship program information being egrated into trailhead sign and provided along nature trails.



Land Acquisition and Non-Park Use Issues

The master plan does not propose acquiring any new lands outside of the park’s current boundary.

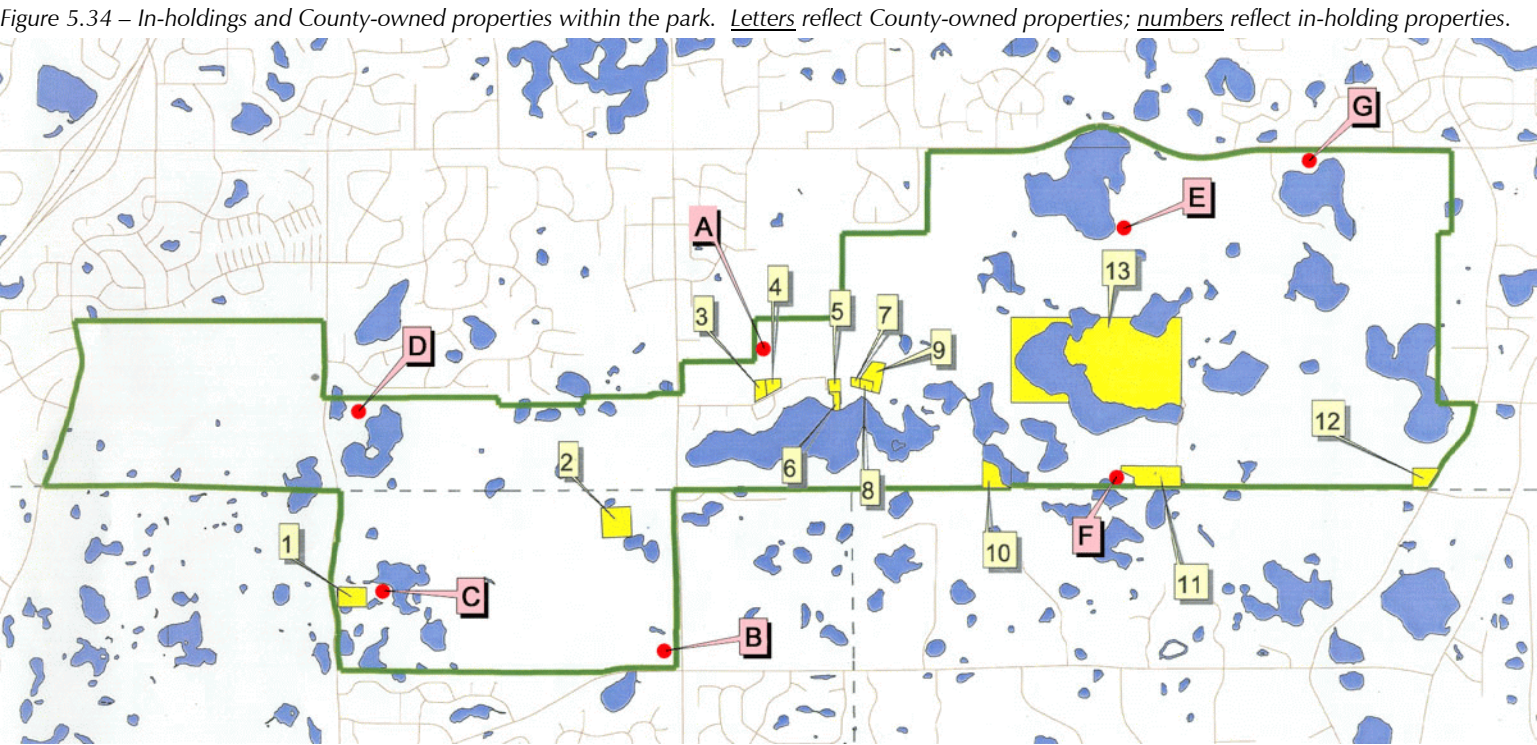
Within the park’s existing boundary, several acquisition and non-park land use issues were considered.

The master plan does not propose acquiring any new lands outside of the park’s current boundary. Although the temptation to do so is strong, in this instance there is no compelling justification to do so, especially since there are numerous in-holdings that remain to be acquired. (Note, however, that Section V considers land use issues outside the park within the context of ecological protection and stormwater management. These issues remain very significant concerns associated with the park that should be given due diligence as part of the strategy to protect and preserve the park’s ecological values.)

Within the park’s existing boundary, several acquisition and non-park land use issues were considered, as defined below.

In-Holdings within the Park

Within the park, thirteen in-holding properties are yet to be acquired. Figure 5.34 provides an overview of their location. The subsequent table lists each of the properties identified on the map.



In-holding Property Data Table

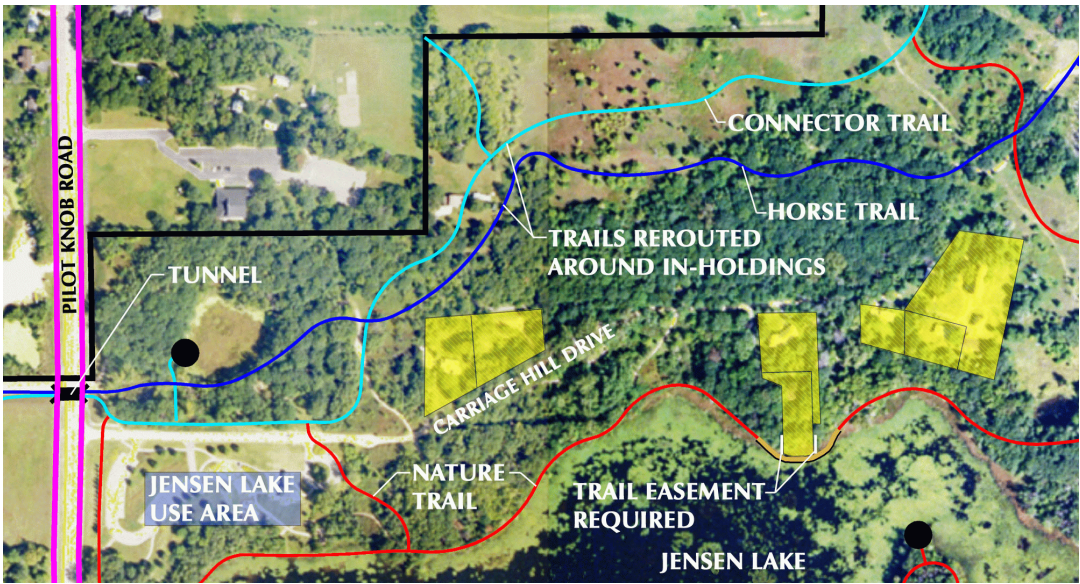
Property Number and Description	Priority Status in Relation to Master Plan
1. 12294 Johnny Cake Ridge Road, Apple Valley Year built: 1915; # of parcels: 1; Acres: 3.0; Assessed value: \$97,400	A higher priority property given that it is defined as the location for the Wheaten Pond Trailhead. Acquisition in the next five to ten years is desirable.
2. 12079 Pilot Knob Road, Apple Valley Year built: 1958; # of parcels: 1; Acres: 5.0; Assessed value: \$174,600	A higher priority property given its isolated location near Camp Sacajawea. It also is near a proposed nature trail corridor. Acquisition within the next ten years is desirable.
3. 1319 Carriage Hills Drive, Eagan Year built: 1982; # of parcels: 1; Acres: 1.0; Assessed value: \$167,600	See below for discussion related to these properties.
4. 1325 Carriage Hills Drive, Eagan Year built: 1959; # of parcels: 1; Acres: 1.1; Assessed value: \$184,800	
5. 1286 Carriage Hills Drive, Eagan Year built: 1935; # of parcels: 1; Acres: 1.0; Assessed value: \$270,500	
6. 1284 Carriage Hills Drive, Eagan Year built: 1960; # of parcels: 1; Acres: .71; Assessed value: \$192,400	
7. 1252 Carriage Hills Drive, Eagan Year built: 1975; # of parcels: 1; Acres: .49; Assessed value: \$154,200	
8. 1250 Carriage Hills Drive, Eagan Year built: 1959; # of parcels: 1; Acres: .68; Assessed value: \$127,900	
9. 1248 Carriage Hills Drive, Eagan Year built: 1970; # of parcels: 2; Acres: 2.5; Assessed value: \$182,300	
10. 1115 120th Street W., Rosemount, MN 55068 Year built: 1948; # of parcels: 1; Acres: 2.7; Assessed value: \$174,800	These are isolated properties that do not directly interfere with park activities. Acquisition is still very desirable, but it is not as high a priority as parcels #1 through #9. Acquiring them when they come up for sale on the open market should be pursued to avoid another party taking ownership for an extended period of time.
11. 535 Gun Club Road, Rosemount Year built: 1936; # of parcels: 1; Acres: 5.9; Assessed value: \$162,700	
12. 2835 120th Street, Rosemount Year built: 1958; # of parcels: 2; Acres: 2.3; Assessed value: \$127,700	
13. Jewish Community Center of St. Paul (Camp Butwin), 2165 Juno Avenue, St. Paul Year built: n/a; # of parcels: 3; Acres: 55.7; Assessed value: \$1,752,400	Larger parcel of property in the heart of the preserve zone. Acquisition of this parcel is also desirable over the long-term. However, from a practical standpoint, that may be a challenging proposition in that the owner is the process of investing up to \$5.0 million into the property to support their emerging programs. Given this, Dakota County Parks should work with the owner to ensure that the development proposed for the site does not pose a negative impact to the park. This includes the siting of structures so that they do not visually interfere with park uses, selecting architectural styles for facilities that are in sync with the park setting, and fostering land stewardship practices similar to those being used for the park (as defined below).

In-Holdings Along Carriage Hills Drive

The in-holdings along Carriage Hills Drive are worthy of additional discussion given their interrelationship with park uses. Currently, these properties have a direct impact on the park experience due to the alignment of the existing horse and nature trails relative to these properties and the access road. With the trails being forced to cross the road in several locations, their continuity is compromised and the user experience diminished. Also, by forcing trail users to cross a road when they would otherwise not have to do so adds a safety concern that ideally should be eliminated.

With the well-timed purchase by the County of an in-holding in 2000 (shown as “A” in figure 5.34), an opportunity exists to realign the trails in this area that would eliminate the conflicts listed above. This is an important point with respect to the priority placed on the purchase of the properties along Carriage Hills Drive. With the realignment of the trails as shown on the master plan and in the below figure, these properties become more isolated from park activities and less obtrusive. As such, they become less of a priority for acquisition relative to other aspects of the master plan.

Figure 5.35 – Aerial showing in-holding properties along Carriage Hills Drive along with trail realignments proposed under the master plan.



Nonetheless, these properties should be acquired as the opportunity to do so arises. As such, special priority should be given to properties that come up for sale on the open market. In these instances, the County should make every effort to purchase the properties before they change hands.

One situation that requires a shorter term solution.

Fortunately, the property owners have been very open and understanding of the issues at hand and have worked in good-faith with the County on finding a solution that works for everybody.

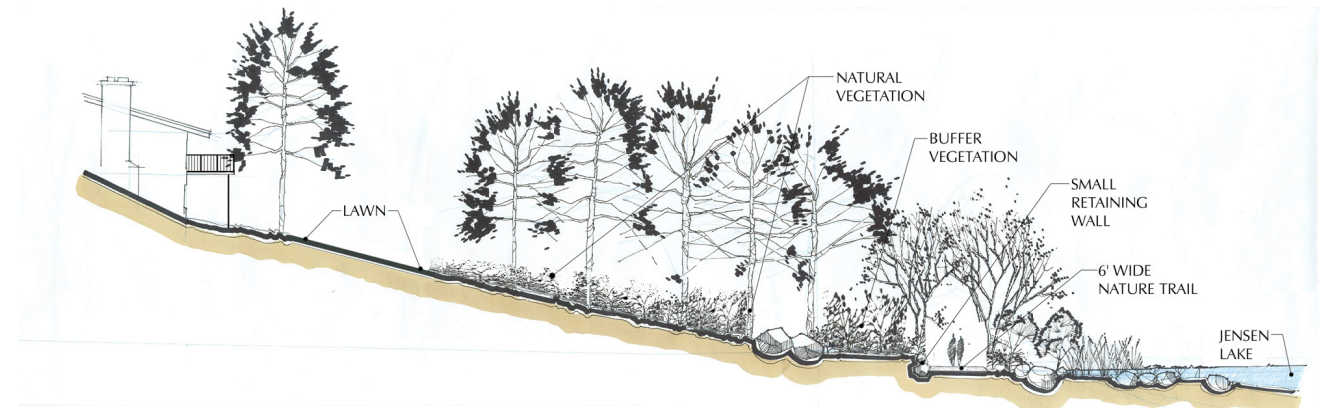
Although a long-term buyout program for these properties is the most reasonable approach, one situation that requires a shorter term solution. This relates to properties #5 and #6 as shown in figure 5.35. These properties have frontage on Jensen Lake and thus interfere with the completion of a very high priority nature trail loop around the lake. In order to make the trail realignments work in this area, provisions need to be made to accommodate this trail along the shore of the lake. This either entails purchasing the properties outright or obtaining a trail easement through the area.

The property owners have been very open and understanding of the issues at hand and have worked in good-faith with the County on finding a solution that works for everybody. Whereas selling their property is of little interest, they are open to the idea of providing an easement to the County for a trail by the lake. Critical to this being successful is addressing any impacts to their property as part of the trail's design. Key points in this regard include:

- ▶ Retaining sense of privacy and separation from the trail. This works both ways, so a good design solution is good for both the property owner and trail user.
- ▶ Maintaining as much buffer and separation between the trail and house as space will allow.
- ▶ Using plantings and take advantage of grade changes to create the buffer.
- ▶ Making sure that park users understand the demarcation line between the park and the private property. This may include the use of a split rail-type fence or other means to define this line.

Figure 5.35 provides a character sketch of one approach to this trail easement.

Figure 5.35 – Character sketch of in-holding property and trail relationship adjacent to Jensen Lake. Intent is to illustrate importance of maintaining a sense of separation between the trail and the private property.



Of equal importance to the physical design is working out an amenable and fair agreement for the easement that protects both the property owners and the County.

As shown, there is adequate space to accommodate a trail easement in this area while protecting the interests of the property owner. Of equal importance to the physical design is working out an amenable and fair agreement for the easement that protects both the property owners and the County. Important to finding a successful solution to this issue is including the property owners in the design process so that their concerns can be addressed proactively as part of the process and that there is no ambiguity in what the trail will look like prior to formal agreements being signed.

Ongoing Relationship With In-Holders

On the surface, one would think that uncertainty and concern would be heightened by the in-holding property owners about what the future holds. On the contrary, the group as a whole respects the fact that they live within the park boundary and understand that someday their property will become part of it. The major issue for them is to simply be treated fairly in any dealings on acquiring their property. (See also Section VI regarding the County's policies on acquiring land.)

An interesting perspective worth noting is that the in-holders are as passionate about the park as anybody else and consider themselves good stewards and neighbors.

An interesting perspective worth noting is that the in-holders are as passionate about the park as anybody else and consider themselves good stewards and neighbors. Since some of the families have lived in the park since the 1940's, a sense of history is carried forward by these residents. Aside from the fact that one day they will be bought out, the relationship between Dakota County and the private property owners has been, and is expected to continue to be, one of collaboration, versus contention. In this spirit, property owners showed a desire to include their property as part of any comprehensive ecological stewardship program and to work with County staff on trail issues and so forth. They would also be interested in considering long-term strategies for selling their properties – including acquisition approaches such as right of first refusal and life estates. The primary value of this is greater security in knowing what the future will bring. Areas of concern in this regard include making sure that they:

- ▶ Get fair market value for their property.
- ▶ Understand any proposed changes to zoning.
- ▶ Are not unduly limited in making improvements to their property in the interim.

If there is one request of importance, it is maintaining a high level of communication with County staff to keep them abreast of properties that are up for sale, being acquired, or being targeted for acquisition.

Stewardship of In-holding Properties

With respect to stewardship, including the in-holdings in the larger stewardship program is quite important. Simply put, the ecological restoration activity in the park can be undermined by properties that do not follow the same management techniques. This is especially true here where the line between the in-holding properties from an ecological perspective is non-existent. As Dakota County implements a more broad-based stewardship program for the park, including these property owners as partners in that program is recommended. (Note that the properties owners themselves brought up this desire and look forward to working with the County staff on this issue.)

County-Owned House Rentals and Life Estates

In addition to the in-holdings defined above, seven properties within the park are owned by the County. Some of these are rented out or have life estates. Figure 5.34 identifies the location of these properties. The following provides an overview of the status of each parcel:

- ▶ Parcel A – Acquired in 2000. House is proposed to be transferred to Community Development Authority (CDA) for affordable housing. (Revenue neutral to the park.)
- ▶ Parcel B – Life estate acquired by the County in 1980's. (Revenue neutral to the park.)
- ▶ Parcel C – House by Wheaton Pond. Poor shape and needs to be removed.
- ▶ Parcel D – Managed and rented by the CDA since 1996. Concern about septic pollution of lake exists.
- ▶ Parcel E – Rental property by County (\$1000/month in 2001). Concern about septic pollution of the lake exists.
- ▶ Parcel F – House purchased in 1998, with agreement of vacation by previous owner by end of 2002.
- ▶ Parcel G – Managed and rented by CDA since 1996. (Revenue neutral to the park.) Concern about septic pollution of the lake exists.

From a park perspective, there are numerous concerns about these properties, including that they:

- ▶ Do not add any value to the park.
- ▶ Pose some environmental concerns (sewage systems).
- ▶ Provide no revenue for the park.
- ▶ Undermine the philosophy of minimizing unneeded or incongruent park uses and built features.

Given the little value these structures provide to the park, the master plan calls for them to be phased out in the shortest possible timeframe acceptable to the County and CDA. In doing so, it would also show good-faith for respecting the integrity of the park boundary. (Section VI considers this in greater detail.)

Universal Design Framework

Figure 5.1 - Enabler Model.

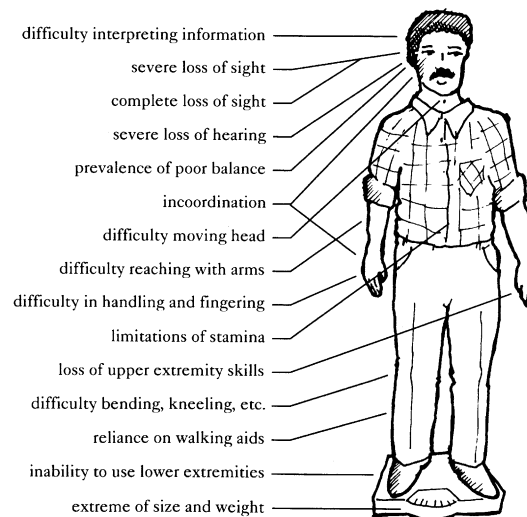
Source: *Universal Access to Outdoor Recreation*ⁱⁱ
(PLAE, Inc. 1993)

The Enabler Model brings to light the broad spectrum of disability concerns that must be considered if universal design is to be achieved. The model serves as a conceptual aid that helps designers and lay persons empathize with the people who will actually be using a site, building, or facility, and encourages a more comprehensive and integrated view of people with and without disabilities.

In recent years, extensive public debate has been focused on equal access to indoor and outdoor public spaces for all individuals. The Americans with Disabilities Act of 1991 (ADA) turned past guidelines and standards into law, forever changing the way accessibility issues are to be addressed. But the ADA is not an end unto itself. It is simply another step toward a design philosophy that ensures accessibility for all. The challenge is to move beyond the ADA to a more encompassing approach to design. The following defines how that challenge will be addressed in this park setting.

The Principle of Universal Design

As stated in the published design guide *Universal Access to Outdoor Recreation* (PLAE, Inc. 1993), past criteria for barrier-free design (elimination of barriers to access) were based upon the needs of average human beings or the needs of the wheelchair user (which was often thought to represent the broadest spectrum of disabling conditions).



In fact, the majority of people with disabilities are ambulatory and do not require a wheelchair. In reality, the range of abilities and disabilities goes well beyond these limited definitions. It has become evident that design philosophy must continue to evolve if a barrier-free environment is to be realized in the design of parks. Universal design is an approach to design that seeks to achieve this philosophy by combining the basic principles of barrier-free design with a more comprehensive view of human beings, as expressed by the Enabler Model in figure 5.1.

Under this paradigm, universal design attempts to consider all degrees of sensory awareness, all types of locomotion, and all levels of physical and intellectual function. By doing so, the needs of individuals with varying desires, abilities, and expectations can be reasonably accommodated in an

appropriate setting. The end result is that individuals with and without disabilities are accommodated in a manner that meets their expectations for a specific outdoor space or setting.

The philosophical underpinnings of universal design as defined by *Universal Access to Outdoor Recreation* includes:

- ▶ People purposely choose settings for their recreation activities.
- ▶ Choices are made with the expectation of achieving specific recreation experiences.
- ▶ Desirability to present as diverse a spectrum of activities and recreation setting opportunities as practical for a given site.

The following recreation opportunity spectrum (ROS) and outdoor recreation access classifications serve as a means to achieve this end. They are flexible guidelines that set the framework for making appropriate accessibility decisions that permit universal access within the context of the public's expectation for a certain type of setting.

Recreation Opportunity Spectrum (ROS)

Applying the principles of universal access requires a defined implementation approach and a set of guidelines. The ROS is a recreation management approach used by the USDA Forest Service that is in keeping with the principles of universal design. The ROS framework is based on a continuum of possible combinations of recreation settings, activities, and experiential opportunities, as well as the resulting benefits that can accrue to the individual (by improving physical and mental well-being) and society.

To be manageable, the recreation opportunity spectrum is divided into four classifications that cover the full spectrum of outdoor recreation environments. These classifications are divided primarily in terms of perceivable modifications to the natural environment and the related influences these modifications have upon visitor expectations. The following briefly defines the four ROS classifications:

- ▶ **Urban/rural areas** – are highly developed and evoke expectations of easy access.
- ▶ **Roaded natural areas** – are less developed than urban settings, but still contain a relatively high number of modifications to the environment. These areas evoke an expectation for a moderate level of accessibility and a reasonable expectation for “like” experiences.
- ▶ **Semi-primitive areas** – are rarely developed, and evoke an expectation of difficult access.
- ▶ **Primitive areas** – have few, if any, modifications. These evoke expectations for the most difficult access that require specific skills and capabilities.

Under the ROS framework, it is not necessary or desirable to develop all recreation equally.

Under the ROS framework, it is not necessary or desirable to develop all recreation equally. From the ROS perspective, each site should be developed or modified in a manner that achieves harmony between recreation expectations and the environmental setting. Development must be tailored to complement the setting. As an example, it is reasonable to expect that the access to the Visitor Center would be greater than access to the less accessible natural areas within the park. *What is important is that the level of access must be in line with what is expected by the public – whether they are able-bodied or disabled – for a particular setting.*

Application of Universal Design Principles

The objective with universal design is to consciously apply the principles to this park setting to determine what is most appropriate given the circumstances. At the very least, the outcome would be that more people of different levels of ability will have life-enriching experiences in the park. At the very most, the park will serve as an example for others to follow, ultimately furthering the cause of making universal access an integral part of all design processes. Of the four ROS classifications defined above, three are found to have direct application in this park: urban/rural, roaded natural, and semi-primitive. The rationale for the use of these two classifications are as follows.

The objective with universal design is to consciously apply the principles to this park setting to determine what is most appropriate given the circumstances.

It becomes imperative that the design process include individuals that represent a cross-section of people with and without disabilities.

Urban/Rural: Considered appropriate due to the regional parks location within a major metropolitan area. To varying degrees, the expectation of the user will be for relatively easy access to all major facilities and amenities. Development areas under this classification include:

- 1) All trailhead facilities.
- 2) Visitor Center area.
- 3) Reasonable access to campground facilities.
- 4) Picnic facilities and group activity areas, including the beach.
- 5) Access to main buildings and reasonable access to group use areas at Camp Sacajawea.
- 6) Access to certain trail loops that provide a “like experience” for the visitor. Connector trails should provide easy to moderate access wherever grade allows.

Roaded Natural and Semi-Primitive: Are the secondary ROS classifications and apply to much of the site outside of defined development or use areas. Under these classifications, the expectation of the user will range from easy to difficult in line with the outdoor experience being encountered. In these areas, site features would not be extensively modified to provide easier access if doing so would dramatically change their character and negatively impact the experience of the user. Again, the intent is to provide like experiences so that all users have an opportunity to appreciate the inherent character and quality of the park. It is not the intent to make the entire park accessible to all populations when that action diminishes the value of the park to those that are more capable.

Involvement of Representative Populations in the Design Process

Since universal design is still an evolving approach to design, achieving universal access is simpler in concept than in practice. Anticipating the needs of people with varying degrees of abilities and disabilities is a formidable task since it is often very difficult to understand the specific needs of individuals with different abilities when one does not share those limitations. Therefore, it becomes imperative that the design process include individuals that represent a cross-section of people with and without disabilities. As the project moves into design implementation phases, efforts should be made to involve representatives of divergent populations in the detail design of specific facilities. This approach helps to ensure that the design for any given facility will actually serve the intended populations.

Control of Borders

With respect to control of the park boundary from encroachment and unauthorized access, the approach called for under this master plan relies heavily on enforcement over physical barriers.

As a natural resource-based park, strict control of the park borders will be necessary at times to minimize encroachment and disruption to ecological systems caused by unlawful use of the park for discarding lawn clippings, building storage sheds, stockpiling lumber, and so forth. At 2000 acres, doing so is also a bit of a challenge. The following considers a number of issues related to border control.

With respect to pedestrian-level access, the trailheads and trail access points defined on the overall park map as shown in figure 5.3 on page 5.7 are the established points of entry into the park. These represent the locations that currently exist or are already planned. Beyond these, no additional defined entry points are being proposed at this time to put practical limits on entry points. The one exception to this relates to a couple of public parks and the public trails in Egan, where additional formalized trail connections may be warranted at some point beyond what is shown on the trails map. Dakota County and the City of Egan should jointly monitor this issue and provide for any new access points that seem practical. Note that adding a new trail access point is expected to be the exception rather than the rule, simply because Dakota County wants to ensure that access is limited to that which is truly necessary.

With respect to control of the park boundary from encroachment and unauthorized access, the approach called for under this master plan relies heavily on enforcement over physical barriers. From a practical standpoint, fencing the entire site would be costly and perhaps unnecessary. There will be, however, situations where adjacent property owners will “take ownership” of park property and use it for storage, rubbish plies, and so forth. To control this abuse, periodic border review by park patrol is recommended, with violators being reprimanded in accordance with County ordinances and laws. In select situations, Dakota County, at its discretion, may determine that a physical barrier, such as a fence, may be warranted. This also holds true for “informal foot paths” that become maintenance and access control concerns.

The one issue that an open border approach cannot be successful in controlling is free-roaming domestic animals. Here too, enforcement of animal control laws is the most reasonable option in spite of its inherent limitations. Consistency in applying ordinances and public education about the County’s responsibilities to take action will be important to controlling this often not noticed, but certainly destructive, occurrence from becoming a problem.